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THE
JOURNAL
OF
THE ASIATIC SOCIETY
OF
BENGAL.

EDITED BY

JAMES PRINSEP, F. R. S.

SECRETARY OF THE ASIATIC SOCIETY OF BENGAL; HON. MEM. OF THE AS. SOC.
OF PARIS; COR. MEM. OF THE ZOOLOGICAL SOC. OF LONDON, AND OF THE
ROYAL SOCIETIES OF MARSEILLES AND CAEN; OF THE ACADEMY
OF NATURAL SCIENCES OF PHILADELPHIA; OF THE
PHILOSOPHICAL SOCIETY OF GENEVA; OF
THE ALBANY INSTITUTE, &c.

VOL. VI.

JANUARY TO DECEMBER,
1837.

“ It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta; it will languish, if such communications shall be long intermitted; and will die away, if they shall entirely cease.”

SIR WM. JONES.

Calcutta :

PRINTED AT THE BAPTIST MISSION PRESS CIRCULAR ROAD.
SOLD BY THE EDITOR, AT THE SOCIETY'S OFFICE.

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VOL. VI.—PART I.

JANUARY TO JUNE,
1837.

“ It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta ; it will languish, if such communications shall be long intermitted ; and will die away, if they shall entirely cease.”

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PREFACE.

WE have the pleasure of closing this sixth volume of our Journal with an unexpected announcement:—the last steam packet has brought out instructions from the Honorable Court of Directors to the Government of India to “subscribe in their name for FORTY copies of the Journal of the Asiatic Society from the commencement of its publication !” We forbear to comment upon an act of liberality by which we shall personally be such a gainer, but which we have neither directly nor indirectly solicited. We can easily imagine to whose friendly influence we are indebted for it, and we hope he will accept our acknowledgments. Our principal difficulty will be how to meet the wishes of the court ; for of our early volumes not a volume is now to be procured ! We must seriously consider the expediency of a reprint, for we have even heard it whispered that an American edition was in contemplation, and such a thing cannot be deemed impossible when we find the Philadelphians undertaking to rival us of Calcutta in printing (and that without government support) a Cochinchinese dictionary* !

Of local support we have lost nothing by the measure we reluctantly adopted at the beginning of the year, of raising the price of the journal from one to one and a half rupee per number. Our list is fuller than ever, and our balance sheet of a much more promising aspect.

* M. P. ST. DUPONCEAU thus writes to M. JACQUET of Paris: “J’ai maintenant le plaisir de vous informer que la Société philosophique Américaine vient d’ordonner l’impression à ses frais dex deux vocabulaires donnès à Mr. WHITE par le R. de MORRONE, ils vont être publiès dans un volume des memoires de son comitè d’histoire et de literature, etant trop volumineux pour faire partie de ses Transactions philosophiques.

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Collections due by Asiatic Soc. and subs. in the } 7,139 7 5	7,139	7	5
three Presidencies,			

The deficiency, supposing all to be recoverable, is 1,349 13 1, or almost precisely what it was last year; so that our present price exactly pays the expenses of publication.

The bulk of the volume has gone increasing at the usual rate, and instead of eight hundred pages, we have now risen to eleven hundred, with sixty plates; too much to be conveniently bound up in one volume. We have therefore provided separate title pages to enable those, who so prefer, to divide the annual volume into two parts with an index, common to both, at the conclusion of the second part.

The prominent subject of public discussion (to imitate the order of preceding prefaces) as far as the Asiatic Society is concerned, has been THE MUSEUM,—the memorial to the local government—now under reference to the Court of Directors,—suggesting that the Society's collection of antiquities and natural history should form the nucleus of an extensive national establishment, in the present day almost “an essential engine of education, instructive alike to the uninformed, who admires the wonders of nature through the eye alone, and to the refined student who seeks in these repositories what it would be quite out of his power to procure with his own means.” It is to be hoped that this appeal to the court will not share the fate of the oriental publication memorial of 1835, which is still unacknowledged; but that we shall soon have an answer embracing the united objects of the Society's solicitude, and enabling her to advance boldly in her schemes to secure for herself, and for the British name the glory of placing ‘India physical, moral, and historical,’ upon the records of literature. What could be adduced as a more convincing ‘argumentum’ (*ad ignorantiam* dare we say?) than the fact that at this moment a French gen-

tleman of fortune well grounded in Sanskrit and other oriental studies at Paris, is come to Calcutta, 'about to retrace the steps of the French naturalists DUVAUCEL and JACQUEMONT in the interest of the antiquarian, as they travelled in that of the physical sciences.' He contemplates exploring *Gaur, Patiliputra, Magadha, Mithila, Kási, Ayudhya, Nipál, Kemaon, the Panjáb Affghanistán, Tibet*; then the *Jain* provinces, as they may be called, of *Márwár* and *Málwá*, and finally the cave antiquities of Western India*.

We wish M. THEROULDE every success, we proffer him every aid; yet we do so not without a blush that any thing should be left for a foreigner to explore! India, however, is large enough for us all to run over without jostling, and we cannot allow that inactivity is at the present moment a reproach against our Society or our governors. We have expeditions in *Cashmir, Sindé, Bhotán, Ava, Maulmain*, all well provided with scientific adjuncts, and contributing to our maps, our cabinets, and our commerce. Our Societies were never more vigorous. The Agricultural of Calcutta is become exceedingly active. The Geographical of Bombay has opened the field with an interesting volume and a journal of proceedings; and in science we have to boast of the brilliant progress of experiment and magnetic discovery due to one whom we should be happy at having enlisted among our own members. With his colleagues of the Medical College,

* We cannot omit to notice here another laudable demonstration of the greater honor that awaits literary merit at Paris than in London—making full allowance for the proverbial truth that a prophet must seek honor out of his own country. We have just learnt that the French Government has ordered a gold medal to be struck for, and the decoration of the Legion of Honour to be bestowed on Mr. B. H. HODGSON, in return for the valuable donation of Sanskrit manuscripts presented by him to the Asiatic Society of Paris,—and in token of their appreciation of the great services he has rendered to oriental literature. Neither in this case is the reward blindly given, nor the present disregarded; for we know that the Sanskrit scholars of Paris have already dipped profoundly into the contents of the Nipalese Buddhist volumes, and in a short time we may expect a full analysis of them. As a comment on this announcement we may add that similar donations more extensive and more valuable were long since presented by the same party to the Royal Asiatic Society and to the College of Fort William, and that (with exception of the Tibetan portion so well analysed by M. CSOMA) they remain as yet sealed books.

Professor O'SHAUGHNESSY has drawn off to their own valuable publication, the subjects of chemical and physical interest to which we should otherwise have felt ourselves blameable in not offering a conspicuous place. While far different occupations have prevented our passing in review the very promising discoveries in this novel and enticing science, to which their public exhibition has now familiarized the society of Calcutta, the sight of models of magnetic motors and explosive engines worked by gas and spark, both generated by galvanism alone, leads us to suggest that mechanics and the arts should have been included among the proper objects of our projected national museum. An Adelaide gallery would do more to improve the native mind for invention than all the English printed works we would place before them.

But we are as usual wandering from the legitimate objects of a preface. Our own attention has been principally taken up this last year with Inscriptions. Without the knowledge necessary to read and criticise them thoroughly, we have nevertheless made a fortunate acquisition in palæography which has served as the key to a large series of ancient writings hitherto concealed from our knowledge. We cannot consent to quit the pursuit until we shall have satiated our curiosity by a scrutiny of all these records—records as Dr. MILL says, “which are all but certainly established to belong to and to illustrate a most classical and important part of the history of this country.” In our hasty and undigested mode of publication, we are doubtless open to continual corrections and change of views: as a talented and amusing satire on our present predilection for old stones and old coins, in the Meerut Magazine describes it,—‘if not satisfied with one account our readers have only to wait for the next journal to find it discarded and another adopted, as in the case of the Bactro-pehlevi alphabet.’

The learned M. E. BURNOUR in a most interesting article inserted in the *Journal des Savans* for June,* says, alluding to the Burmese inscription at *Gaya* published first in the journal, and

* On the grand work of the Chinese Buddhist traveller FOE KOUE KI, lately published at the expense of the French Government, through the labour of three successive editors MM. REMUSAT, KLAPROTH and LANDRESSE. Alas! when shall we in India have an opportunity of seeing these works at any tolerable period after their publication?—ED.

afterwards more completely commented upon by Colonel BURNES,—“ il faut le dire à l'honneur des membres de la Société Asiatique du Bengale, le zèle qui les anime pour l'étude des antiquités de l'Inde est si soutenu et si heureusement secondé par la plus belle position dans laquelle une réunion de savants ne soit jamais trouvée, que les monuments et les textes qu'ils mettent chaque jour en lumière succèdent avec une rapidité que la critique peut à peine suivre.” While they are taken up with an object once published, we are republishing or revising or adding more matured illustration to it. Some may call this system an inconvenient waste of space and tax on readers, who are entitled to have their repast served up in the most complete style at once, and should not be tantalized with fresh yet immature morceaux from month to month. We, however, think the plan adopted is most suitable to an ephemeral journal, which collects materials and builds up the best structure for immediate accommodation, although it may be soon destined to be knocked down again and replaced by a more polished and classical edifice :—*diruit ædificat ; mutat quadrata rotundis*,—may still be said of our journal, without imputing capricious motives to our habit of demolition. We build not fanciful theories, but rather collect good stones for others to fashion, and unless we advertize them from the first, with some hint of their applicability, how should architects be invited to inspect and convert them to the “benefit and pleasure of mankind?”—*hitasukhāya manusānam*,—as the stone pillars at *Delhi* and *Allahabad* quaintly express the object of their erection.

Connected with the subject of these remarks we would fain in this place give insertion (and we will do so hereafter) to a valuable series of criticisms on the matter of our last volume contained in M. JACQUET's correspondence. It is just what we most desire. With the aid of an index, such additional information and correction is as good as if incorporated with the text, to the reader who in future days wishes to ferret out all that has been done on a particular subject ; and we would have all our contributors and readers bear in mind that our journal, though it has long changed its title, does not pretend to have changed its original character of being a mere collection of “Gleanings.”

Calcutta, 1st January, 1838.

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ERRATA.

Page line

IN NO. 26, (VOL. II.) OF THE JOURNAL.

- 89, 26, for 'the first specimens,' read 'the finest.'
 93, 29, read 'No. 17 Lymnaea,... (mihi)—limosa?'
 523, 3, for 'knee,' read 'neck.'

IN THE JOURNAL FOR 1836.

- 733, 7, from bottom, read 'granular matter, the fovilla, and bursts if the immersion is somewhat protracted.'
 812, 21, *dele* the proposed name Cyananthus, which is already appropriated in Dr. WALICH's catalogue.
 829, 3, from bottom, for 'interesting,' read 'intimate.'
 348, 6, after 'to this' insert 'day.'
 350, 44, for '2,3. Hunda,' read '2. Hunda.'
 377, 3, from below, for 'a,' read 'an.'
 384, 9, from below, for 'general,' read 'generic.'
 386, 22, after written insert semicolon.
 387, 4, from below, for 'صورات' read 'صورات'
 392, 4, for 'unexpected,' read 'unsuspected.'
 391, 12, for 'Denavāgri,' read 'Devanāgari.'
 460, 35, for '𑀧𑀺𑀭𑀸' read '𑀧𑀺𑀭𑀸'

- 467, 19, for 'Parthia,' read 'Bactria.'
 468, 21, for 'the Sanchi,' read 'at Sanchi.'

The vowel mark *e* has been broken off under the press in a great many passages of the Sanskrit readings of the Delhi inscription in the July number, particularly in the word *mé*.

- 581, 7, after 'hy,' insert 'the.'
 583, 5, of notes, for 'nimitat,' read 'nimita.'
 584, 12, ditto *dele* 'm' after 'esa.'
 585, 9, ditto for 'junè,' read 'janè.'
 — 20, ditto for 'participelar,' read 'participular.'
 594, 25, ditto for 'adopting,' read 'adapting.'
 595, 12, ditto for 'nacshatras,' read 'nacshatric.'
 603, 11, ditto for 'dhara,' read 'ādhāra.'—
 604, 4, ditto for 'neat,' read 'next.'
 608, 6, ditto for 'you,' read 'thou.'
 — 19, ditto for 'Kahgur,' read 'Kahgyur.'
 676, 7, for 'this powerful,' read 'his powerful.'
 — 3, from below, for 'ayantaliyam,' read 'anantaliyam.'
 766, 29, for '24° 13½,' read '24 miles: 13½.'
 779, 2, and 5, for 'is,' read 'are.'
 791, 8, for 'Chadaguttassa,' read 'Chandaguttassa.'
 — 17, for 'leaxes,' read 'leaves.'
 794, 7, after quarter, insert full point.
 — 3, from bottom, for 'very,' read 'verb.'
 795, 30, for 'papey,' read 'paper.'
 — last line, for 'वह' read 'वट.'
 876, 1, for 'توفى يوم الثلاثاء' read 'توفى يوم الثلاثاء' and in the translation, line 14, for 'WAD,' read 'WALD,' (or WALR,) and for 'Monday,' read 'Tuesday.'
 884, 7, for 'बसारि,' read 'विसारि.'
 13, for 'आयातरम्यं,' read 'आपातरम्यं.'
 19, for 'विशोधि,' read 'विष्माधि.'
 976, 3, for 'स्फुट,' read 'स्फुट.'
 4, for 'हस्य,' read 'हस्यु.'
 6, for 'तत्तो,' read 'तद्तो.'
 13, for 'सादिकेनाथेनचत्तो,' read 'सादेकेनाथेनचत्तो.'
 977, 18, for 'जादनेरणा,' read 'जनोद्वरणा.'

942, [The extract from the Rekha Ganita differs very materially from the copy in the College here, and the following passage in page 944, after the word भवति in line 7 is required to complete the explanation of the figure:

तद्विशिनद्धितयोः रेखयोरन्तरमु सेचरमधिकमेव भवति यचाल्प मन्तरं
 The rest are additions to the preface which it is less necessary to correct.]

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Inscription on the BHITARI LATH in the Gházipur district.
see Plate XXX for elevation.

[illegible]

Lt. A. Cunningham des

J. Prinsen lith

Actual size of the sculptured letters.

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I.—*Restoration and Translation of the Inscription on the Bhitári Lát, with critical and historical remarks. By the Rev. W. H. MILL, D. D., Principal of Bishop's College, Vice-President, &c. &c.*

The discovery in the *Ghazipur* district, of a pillar with an inscription bearing the same royal names and genealogy as No. 2 on that of *Allahabad*, and continuing the series downward by three or four generations from SAMUDRA-GUPTA, the principal subject of panegyric in both, might be expected to furnish valuable supplementary information on points which that monument left in obscurity. What was the seat and extent of the empire of this GUPTA dynasty, and what was the precise place which the acts and events there described bore in the general history of Northern India in the ages that followed the great eras of VICRAMÁDITYA and SÁLIVÁHANA,—are points on which we might hope to gain more light by a document of this length, than from any others which the progress of antiquarian discovery has yet produced.

The actual information obtained from this inscription, though not altogether destitute of new and interesting particulars relating to the state of India at the time of these kings, as I hope to shew in the few historical remarks subjoined to the reading and translation, is yet far from affording the desired satisfaction on the principal points just mentioned. Except the bare point of succession, and some adventures rather alluded to than related in verses of a somewhat obscure style of composition, the information of a directly historical nature extends little beyond what is obtained from the numismatic researches so ably and indefatigably conducted by our Secretary. Whether a more complete

transcript would much increase our information from this source, may also be doubted. Lieutenant CUNNINGHAM, to whose zeal and activity the inquirers into Indian antiquities are so deeply indebted, states that he made the transcript of this Blitári inscription under very serious disadvantages : but I am not disposed to attribute to any imperfections arising from this cause, the whole or even the greater part of the errors discoverable in the inscription as now exhibited. Some are certainly chargeable on the sculptor who formed the letters on the pillar, unfaithfully representing the remembered or written archetype before him : and these errors are of sufficient magnitude to induce the probable belief, that others occasioning more perplexity in the deciphering, may have arisen from the same source. From whatever source, however, they proceed, they are capable of being completely detected and amended in all the earlier part of the inscription : viz. the introduction, and the laudatory verses that follow ; but when the verse suddenly ceases or changes, and that in the midst of the stanza, as it does about the middle of the 14th line on the pillar,—it is impossible to say how far errors of the same kind with those before found and corrected, (such as this sudden cessation itself seems to indicate) may have produced the general unintelligibility of the document until we come to its last line, the 19th. With the exception of those four lines and a half, the rest, notwithstanding the indistinctness of many of the letters (indicated by the frequent double readings and occasional lacunæ in Lieutenant CUNNINGHAM's pencil copy), and the more serious difficulty arising from the positive errors above mentioned, may be interpreted with sufficient confidence.

That I may not, however, seem to be gratuitously imputing error to an unknown artist more than twelve centuries dead, with a view to screen the want of skill or accuracy in his living transcribers and interpreters,—I am bound to make good the charge in question in detail, and in a manner that may bring conviction to the mind of every competent scholar. The substitution of श् for स in the word यत्तावसन्तेः (*cohibitis-affectibus-viri*) in the 6th line, is certainly the mistake of the graver, not of his copyist : as is also the equally evident substitution in the following line of the trisyllable पृथिवी *prithivī* for its synonyme पृथ्वी *prithvī* (*the earth*) ; where the latter word of two long syllables is indispensably required by the measure of the verse, indicated as it is by all the preceding and subsequent words in a manner not to be mistaken. These words in their written forms in the ancient character, are too unlike what are severally substituted for them to make this the possible error of a European copyist unacquainted with Sanscrit,—while they are pre-

cisely such mistakes as a Hindu superficially acquainted with that language might most easily commit, if uninspected, in a work like this : the former arising from an ignorant confusion of two words of similar sound, but wholly different etymology as well as meaning,—the latter from total inattention to the rules of metrical harmony. Now the existence of two such glaring errors of the sculptor, uncorrected, renders it highly probable that we should impute to him a large proportion, if not the whole, of the seven following equally manifest errors, (which might in their own nature, the first especially, be as easily committed by the European tracer of a facsimile.)

1. We have in line 8, at the close of the first metrical stanza, one न instead of two in the words ननर्त्त *nanartta* required to close the verse in the *Mánini* measure

ॐ ॐ ॐ ॐ ॐ — — — ॐ — — —

with no room whatever in the facsimile for the missing letter.

2. We have in the beginning of line 10, the syllables ह्रिव with not the least space between them—though it is absolutely certain that a त ought to be there, no other syllable making a word with the syllables प्रणिहि preceding, viz. the word *pranikota* from the close of the 9th line.

3. Again in line 10, we have in the facsimile ददे where the measure cannot possibly admit more than the latter of these two syllables, viz. the long दे in प्रदेवा.

4. We have in line 12, the syllables शुदिशिदिशि without the least interval in the facsimile between the first and second of them,—though the first is the penultimate of a connected and well defined stanza, and the four following are as evidently the beginning of another : the verse thus requiring, as does the sense independently of the verse, the syllable इ to close the former stanza with the word *suddham*.

5. We have in line 13, the syllables यः जि in close juxtaposition, not only contrary to the rules of *sandhi*, which in verse are carefully observed, but the former appearing from the preceding syllables to be the penultimate of a *Mánini* line, while the latter appears equally from the following ones to be the *third* syllable of the next : so that there are absolutely required three syllables for which there is no space whatever in the facsimile ; viz. either प्रायिपु which I have supplied, or something equivalent, to close one line of the stanza and begin the next.

6. There is no adequate space for the seven syllables required to be supplied at the beginning of the 14th line on the pillar to com-

mence the second line of the stanza there, though the continuance of the same measure is so clearly marked by what precedes and what immediately follows: and

7. What is still more strange, that measure closes with the second line of the stanza; what follows being as irreducible to metre as to good sense.

With these nine specimens of most evident error in as many lines of the inscription, the two last errors implying the skipping of several syllables at once,—and closed with the fact that there is no integral number of *Mānini* stanzas of four lines, but $5\frac{1}{2}$ only from their commencement in the 7th line of the pillar,—the grounds of conjectural emendation were too slight for its probable application, when the guide of metre was wanting. Accordingly from the 14th to the last line of the pillar, which supplied a stanza in the ordinary *Anustubh* measure, (a space constituting about one quarter of the inscription,) I have been content to groupe together those syllables which formed connected meanings, leaving the rest in which no such connexion appeared, uncopied: and abandoning, with respect to them, a task so much resembling that which the Chaldean king imposed on his magicians,—that of supplying the dream as well as the interpretation.

After this explanation, I proceed to exhibit the text, together with an English version of those three quarters of the inscription which are sufficiently intelligible, beginning with the seven lines of prose, that declare the genealogy and the succession.

Line of
the Lat.

1. * परोर्विराजोद्धर्तुः पृथिव्यामप्रतिरथस्य चतुर्दधिसलि
2. [ल] खदितयागसिद्धि चंद्रवरुणेन्द्रान्तक [सेवा] * कृतद्रुम
राशः द्युयशसो ऽ नेकशो हिरण्यतटप्रदस्य दोराकृन्नखमेरुहर्तु
3. म्महाराजश्रीगुप्तप्रपौत्तस्य * महाराजश्रीघटोत्कचपौत्तस्य
महाराजाधिराजश्रीचन्द्रगुप्तपुत्तस्य [लिच्छ] विदाहित्रस्य
4. महादेव्यां कुमार[देव्या] * मृत्युन्नस्य महाराजाधिराजश्री
समुद्रगुप्तस्य पुत्तस्तत्परिगृहीतो महादैत्योत्पन्नदेव्यामु[त्पन्ने]
5. यदाप्रतिरथ * परमभागवतो महाराजाधिराजश्रीचन्द्रगुप्त
स्तस्य पुत्तस्तर्ह्यदानोद्यतो महादैत्यो ऽ भवदैव्याप्सच्छः परम
6. * [भागव]तमहाराजाधिराजश्रीकुमारगुप्तस्य प्रथितमृदु
मतेर्यतावसक्तेः पूगयशसः पृथिवीपतेरुत्तमश्री * [परि] गत
7. वनमरूवी

- [रिपु]प्रजितयशाः पृथ्वीविपत्तीः सुतीर्थं
 [दि]शति नु कमलास्यो गुप्ततन्त्रैकवीरः ।
 8. प्रथितविमल* [कीर्त्तिर्ना]मतः स्कन्दगुप्तः
 सदरितचरितात्मा यो १ भिन्दते [न]नत्तै ॥
 न विहतमनदात्मा तान्तधीदर्शिकीर्त्तिं
 9. रविम*पलसाता विक्रमेण क्रमेण ।
 प्रतिदिशमभियोगो दीप्यते येन लब्धो
 १ नभिमतविजितात्मा प्रोद्यते सो १ परेन्द्रैः ॥
 10. प्रणिहि*तव[सुनातः]संविधानप्रदेया
 विचलितकुललक्ष्मीस्तडनायोद्यतेन ।
 क्षितितलनयनीया [ते]न नीतास्य सीमा
 11. दुरप*चयमकाशं वाक्यमित्रं गदित्वा ॥
 क्षितिमचरणपीठ १ स्यार्पितो वामपादः
 प्रसरमनुपमाद्रौ न्यस्तशस्त्रः प्ररेमे ।
 12. चिरमनुप[म]*सप्ताद्रेर्द्व*पञ्चेन्निरुद्धं
 चरितममलकीर्त्तैर्गीयते यस्य शु[द्ध] ॥
 दिशि दिशि परितस्थु[स्तं]कुमारं मनुष्याः
 13. पितरि दिवमुषे[ते]*विप्रता[पा]मलक्ष्मीं ।
 भुजबलविजितारैर्यं पितव्यादयः [प्राग्
 रिपु]जितिपरितोषेन्द्रांतरं साखनेत्राः ॥
 हतरिपुरिव कृष्णो देवकीं मन्यमान
 14. * इदमतिदयया] रुक्मांशुरव्यात्प्रचित्तं ॥
 विप्रकिरूप्यदेहासुमवनिं विजेतुर्निजारेर्विद्धेपं कृत्वादीर्यते
 15. ह्यम्भदेवो विस्मितः प्रतिदिन * म - - - - - बद्धवीर्यस्य
 16. सुमार्गद्वैत्यपराक्रमितुर्महावर्त्मकरस्य * शत्रुपशरानन्यस्य
 दुःश्रमिणः राजाद्भुतपरमारिरुद्धिप्रख्यापितो - - - - -
 17. विश्रोत्रं पि शार्ङ्गध्वनि * - - - - - हतस्य शार्ङ्गिणः
 18. * सदार्चितस्कन्दरुद्र रत्नाकरार्कनेतुः महेशप्रीतगुप्तः - - - -
 19. संततं गेवते मुर्त्तिमिमां यश्चात्र भूपतिः ।
 रुद्रेणार्हाद्यदशे स मतः प्रणयपण्यधोर् ॥ इति ॥

Translation.

Of the liberator of the greatest kings, incomparable on the earth,—by whom loads of forest timber are collected for the holocaustic service of INDRA, VARUNA and YAMA by the completion of sacrifices bearing the flavour of the waters of all the four circumambient oceans,—whose glory reaches to the firmament,—who on every side bestows liberally as the

golden-sided mountain (Meru),—by whom Meru himself might be borne aloft in the piercing talons of his mighty arm,—the great grandson of the great king GUPTA,—grandson of the great king GHATOTKACHA,—son of the great king, the sovereign of kings, CHANDRA-GUPTA,—maternal grandson of LIÇÇHAVI,—born of the great goddess-like CUMA'RA-DE'VÍ,—the great king, the sovereign of kings, SAMUDRA-GUPTA,—

Of him, when the accepted son was pronounced to be the son of DE'VÍ, daughter of MAHA'DAITYA, the incomparable worshipper of the supreme BHAGAVAT (CRISHNA), the great king, the sovereign of kings, CHANDRA-GUPTA,—then his son, before addicted to illiberality, and a man of great parsimony, was purified by the waters of destiny. Such was the excellent blessedness of the worshipper of the supreme BHAGAVAT, the great king, the sovereign of kings, CUMA'RA-GUPTA, celebrated for his mildness of disposition, and of subdued passions united to accumulated fame,—a blessedness pervading even the forests and desert lands.

Verse.

Having well surmounted the calamities that oppressed the earth, the chief and unique hero of the Gupta race, of face like a lotus, displays the glory of conquest : even he, by name SCANDA-GUPTA of distinguished and spotless renown,—who in the spirit of his own dreadful deeds danced in the fierce dance, (SIVA-like after his vengeance for SITA's death.)

Possessed of a clear insight into the profound wisdom of the Tantras, with a spirit of unceasing silence (on their incommunicable mysteries—and in accordance with their precept and discipline) mangling the flesh of the refractory in successive victories ;—he by whom their challenge to battle being accepted and answered, forms a splendid spectacle in every quarter of the earth,—is declared even by alien princes to be one whose mind could not be shaken by sudden and unexpected calamity.

For afterwards by him to whom the keeping of his treasure was committed,—the boundary which was given as a sacred deposit, and worthy to be extended to the extremities of the earth—was treacherously taken away, and the prosperity of the family removed from it,—(even by him the minister aforesaid) coveting the wealth of that family, having previously professed much attachment in words, but destitute of the light (of truth), and followed by calamitous defection.

Yet (having conquered) the land, his left foot was fixed there on a throne yet untrodden by mortals, and having obtained excellent room, and laid by his weapons, he reposed from war on his (inaccessible) mountain. His pure and noble exploits, the exploits of a man of unspotted fame, although long opposed by the kings of the excellent seven hills, are now sung even by them.

In every region did men surround that young prince, when his father had gone to heaven, as one who had attained most illustrious prosperity : whom his father's brother and the other chiefs did first (thus surround, hailing him) as their new sovereign, in the midst of the joy of conquest, with tears in their eyes.

May he who is like CRISHNA still obeying his mother DE'VAKÍ, after his foes are vanquished, he of golden rays, with mercy protect this my design.



Whatever prince in this place perpetually worships this sacred image, is considered by RUDRA (SIVA) himself as one whose understanding is ennobled and rendered praise-worthy by this affectionate devotion, even in the land of ARHA (INDRA) and the other celestials.

Remarks on the above Inscription.

The parentage of SAMUDRA-GUPTA son of CHANDRA-GUPTA, which closed the *Allahabad* inscription, forms in nearly the same words the beginning of the present; and his panegyric which pervaded the earlier monument, is the leading subject in the prose part of this. The first new fact is the designation of his son and successor, CHANDRA-GUPTA the second: whom it seemed most obvious on the first reading of the names* to identify with the expected son and heir of the 18th line of the pillar of *Allahabad*, the offspring of SAMUDRA-GUPTA and his principal queen the daughter of the proud princess SANHÁRIÇÁ. This identification, however, is removed by the terms of the inscription itself: this son does not succeed by right of primogeniture, but as peculiarly selected (*parigrihíta*) on account of his eminent virtues from the rest of the family or families of the polygamist king, and is the offspring not of SANHÁRIÇÁ's daughter, but of the daughter of a prince named MAHÁDAITYA. The son and successor of CHANDRA-GUPTA II. is CUMÁRA-GUPTA, who is represented as having been a very unprincely character at the time of his father's adoption as heir to the throne; but having been disciplined by some unnamed fortune, becomes on his own accession to the throne, an emulator of the mild virtues and the *Vaishnava* devotion of his parent. The next king is SCANDA-GUPTA, who may be most probably supposed to be the son of his immediate predecessor CUMÁRA-GUPTA: but on this point, the verse which here takes the place of the more narrative prose, is unfortunately silent. We only hear of his distinguished fame as a warrior: and that his piety, congenial with his acts, does not take the same turn with that of his two nearest predecessors, of devotion to VISHNU the Preserver, but attached itself to the opposite system now so prevalent in this part of India, the deep, mysterious and sanguinary system of the Tantras. After the conquest and slaughter of many opposing kings, we hear

* See p. 644 of volume V.

of his eventual triumph over a more formidable enemy than all, a treacherous minister, who for a time succeeds in dispossessing him of his kingdom. After vanquishing, however, the rival monarchs of the seven hills, and resting peacefully on his laurels in his inaccessible mountain throne, (localities which carry us away from the immediate vicinity of the Ganges, but whether towards the north or Central India we have no means of determining,) this worthy worshipper of SIVA and DURGA ascends to heaven: and his brother and the other chiefs, with mingled feelings of grief and affectionate allegiance, proclaim his young child the heir to his father's crown and conquests. This youth is described as obedient to the queen dowager his mother, as was CRISHNA to his mother DE'VAKI'; but the part of the inscription that proceeds to speak of him is confused and unintelligible; neither does he appear to be once named; unless we conceive some letters of line 18 to give his name thus: MAHESA-PRITA-GUPTA, (*the Gupta attached to Siva, or beloved by Siva.*) He is probably the MAHENDRA-GUPTA whose name occurs in several of the newly discovered coins of this dynasty.

The royal family of the Guptas, therefore, as adapted to the time of this inscription, stands as follows; the Arabic numerals denoting sovereigns, or those to whom the prefix *Maharāja Adhirāja* belongs, in the order of their succession.

GUPTA, a Rāja of the Solar line.

GHATOTKACHA, ditto ditto,

LIÇÇHAVI,
whose daughter was

1. CHANDRA-GUPTA I. — ❀ — CUMA'RA-DEVI',
queen consort.

MAHA'-DAITYA,
whose daughter was

2. SAMUDRA-GUPTA, — ❀ — DE'VI',
one of the queens of
SAMUDRA-GUPTA.

3. CHANDRA-GUPTA II.

4. CUMA'RA-GUPTA,
whose son probably was

5. SCANDA-GUPTA,

6. A young prince (MAHENDRA-GUPTA ?)
a minor at the date of this inscription.

One remarkable fact, learnt solely from this inscription, is the prevalence at the time of the Gupta dynasty, of the two opposite sectarian forms of later Hindu worship: that of the exclusive devotees of VISHNU on the one hand, whose favorite authority is the celebrated poem (probably inserted among the Puránas by the comparatively recent grammarian VOPÉDEVA) called the *Srímad Bhágavata*: and that of the worshippers of SIVA and his female energies on the other, whose text books are those singular compounds of Cabalistic mystery, licentiousness and blood, the Agamas or Tantras.—The princes CHANDRA-GUPTA and CUMA'RA-GUPTA are expressly commemorated as belonging to the former class, and SCANDA-GUPTA as an adherent of the latter. And here I must recall an observation that I hazarded when commenting on the *Allahabad* inscription, (J. A. S. vol. iii. p. 268,) that the worship of the Saktis, with its existing mysteries and orgies, was most probably unknown in India at the date of that monument. The terms in which that species of devotion is spoken of about a century after, in the second* of the metrical stanzas in the present *Bhitári* inscription, shews that the same system was even then dominant, and sufficiently powerful and seducing to enlist kings among its votaries. And while this (if I am correct in supposing the age of the Gupta dynasty to be somewhere between the 1st and 9th centuries of our era), may be among the earliest authentic notices of that mode of worshipping BHAIRAVA and CÁLI',—the mention of it at all furnishes an additional proof to my mind of the impossibility† of referring these monuments to the earlier age of CHANDRA-GUPTA MAURYA, or that of ALEXANDER the Great, and the century immediately following.

A far more plausible hypothesis is the identification of this Gupta dynasty, with that which is mentioned in the prophetic-historical part of the Vishnu-Purána, (Book iv. chap. 24,) as arising in this precise tract of country, contemporaneously with other dynasties in different parts of India, during the turbulent period that followed the extinction of the last race of Indian sovereigns that reigned in *Magadha*, and the irruption of Sacæ and other foreign tribes from the north-west. The dominion of the Guptas is there said to include the great city of *Prayága* on the confluence of the Ganges and Jumna, where their principal monument is now found, as well as the yet more sacred city of *Mathurá* on the latter river, and the less known names of *Padmávati* and *Kánti-purí*, (probably near the site of our present *Cawnpore* :) it is also described as extending down the Ganges to

* See Note A.

† See Note B.

Magadha or *Behar*, where one *VISVA-SPHATIKA* (or *VISVA-SPHURJĪ*, of the old race of *Magadha* sovereigns) had extirpated the existing race of *Xattriyas*, and set up other low castes, together with *Bráhmans*, in their stead ; as I read in two MSS. copies* of the *Vishnu-Purána*, the words of which are

मागधायां तु विश्वस्फटिकसंज्ञो न्यान्वर्णान्करिष्यति कैवर्त्तयदु
पलिन्द ब्राह्मणान् राज्ये स्थापयिष्यति । उत्साद्याखिलक्षत्रजातीर्नवना
गाः पद्मावत्यां कान्तिपुर्यां मथुराद्याननुगंगा प्रयागं मगधा गुप्ताश्च
मागधान् भोक्ष्यन्ति ।

“ In the country of *Magadha*, one named *VISVA-SPHATIKA* shall form and set up in the kingdom other castes, the *Kaivarttas*, *Yadus*, *Pulindas*, and *Bráhmans* : and thus having abolished all the races of *Xattriyas*, shall the nine *Nagas*, and in *Padmávatī*, *Kánti-purī*, *Mathurá*, and on the Ganges from *Prayága*, shall the *Magadhas* and the *Guptas* rule over the people belonging to *Magadha*.”

All these new sets of kings, with the *Naishadhas* in *Calinga*, &c. and the more barbarous races elsewhere, are represented in the *Purána* as ferocious, rapacious and tyrannical men, of little knowledge and no principle, whose rise and progress and fall are to be equally sudden and extraordinary, short-lived, and only nominal observers of religion. The people under their sway, and through the contact of foreign races, will gradually fall into that neglect of caste and other religious observances, that reference of all things to worldly riches and consequent impiety and unrighteousness, that will prepare the way for the tenth and last incarnation of *VISHNU* as *KALKI*’ to restore all things. Thus, soon after the account of their *Guptas*, close the prophetic announcements of *PARÁSARA* to *MAITREYA* of what was to befall the world after him, and with them the 4th Book of the *Vishnu-Purána*.

It is true, that according to the chronology of the *Purána*, as set down minutely in that chapter, we should have the commence-

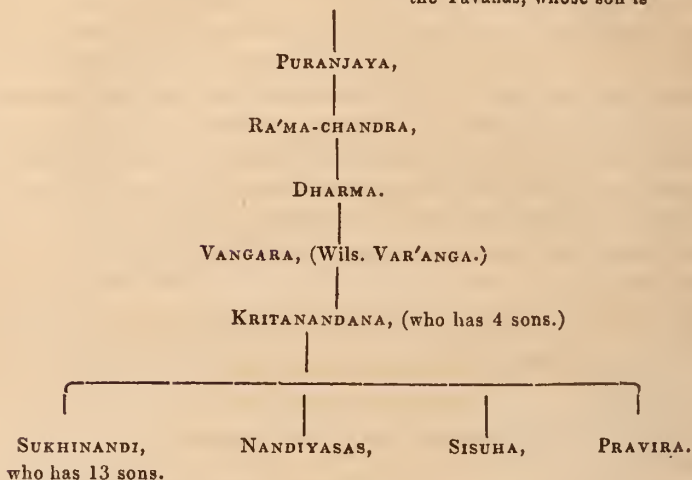
* The valuable English abstract and partial translation of this *Purána* (as of the others) deposited in the Asiatic Society’s Library by Professor H. H. WILSON,—is silent on the latter point, the association of the *Guptas* with *Magadhas*, and their dominion in *Behar* : relating their possession of those four cities in the *Doáb*, *Padmávatī*, *Kánti-purī*, *Mathurá*, and *Prayága*, as altogether unconnected with the affairs of *Magadha*, and the extirpation of the *Xattriyas* from that country, with which they are distinctly blended in the Sanscrit passage as given above.

For the further testimony of the *Srīmad-Bhāgavata*, see Note C.

ment of the reign of these Guptas posterior to SANDRACOTTAS, and consequently to ALEXANDER the Great, by $(137 + 112 + 45 + 456 + 1399 + 300 + 186 =)$ 2635 years,—and therefore as really future to us as to the prophetic Muni and his hearer. But setting aside all other considerations, it is only the four first of the seven component periods of this sum that will appear to an attentive inspection of the Purána itself, to be entitled to the least attention : viz. the spaces assigned respectively to the Maurya, the Sanga, the Kanva and Andhra dynasties of Hindu sovereigns in *Magadha* : of which the name of each individual king is set down, their several numbers 10, 10, 4 and 30 agreeing perfectly with the durations assigned to each race*. But the fifth and sixth periods of 1399 and 300 years have no such catalogues of kings accompanying them, but only a statement that in the former there should rule in succession seven kings of the Abbhra caste, 10 Gardabhiras, 16 Saka or Scythian kings, 8 Yavana or Grecian, 14 Tushára, 13 Munda, and 11 Mauna kings : and in the latter period of three centuries, Paura and 11 other unnamed sovereigns. This enumeration, strongly indicative of the disturbed and semi-barbarous condition of affairs, which caused the suspension of all the ancient records,—and in which synchronous dynasties might easily be mis-stated as successive ones, and the sum of years readily palmed on the Hindu reader, to enhance the antiquity of the classical and heroic ages of the country,—is succeeded, in the last period immediately preceding the rise of the Guptas, by something more resembling the records of earlier times. As this list, occupying the seventh period above mentioned of 186 years, has not yet been published,—(that of HAMILTON in the corresponding period being somewhat different and much more confused,) I will here set it down from my MS. of the Vishnu-Purána.

* These may all be seen, as they stand in this and other Puránas, in p. 100 of Mr. J. PRINSEP's Useful Tables. The accuracy of these lists is strongly confirmed by the collateral testimony of the Chinese travellers in India in the 5th century, whose relation is published in the London Asiatic Journal of July last. Their king of *Kapila*, YUE-GAE, *Beloved of the Moon*, whose ambassador sent presents to China A. D. 428, is (not CHANDRA/NANDA, as the learned translator of that work suspected, but) CHANDRA-SRI', the king immediately preceding PULOMARCHIS, the last of the Andhra dynasty at *Magadha*,—who was reigning at this precise time. This removes the hope entertained by Mr. J. PRINSEP, (to whom I am indebted for the communication of this paper) and myself, that this might prove to be the CHANDRA-GUPTA of the inscription, and makes the latter posterior to him by probably three or four centuries.

VINDHYA-SACTI from Kilakila, who adopts the manners of the Yavanas, whose son is



After whom came 4 Bahukas or Bactrians, 3 Puspamitras, 13 Yadu-mitras, 7 Mekalas; and in *Kausala* or *Oude*, 9 Naishadhas.

Thus the account of this dynasty, which HAMILTON calls the Bahlic or Bactrian one, terminates in a confusion worse confounded than that from which it emerged. And this statement in the Vishnu-Purána is immediately followed by the passage above quoted respecting the Magadhas and Guptas.

Allowing, however, the least possible duration to the confused periods that followed the subversion of the Andhra dynasty in the middle of the fifth century after Christ, it is scarcely possible to fix the subjects of our present inquiry, the Guptas, higher than the age of CHARLEMAGNE in Europe, if we suppose them identical with the Guptas of the Purána.

NOTE A.

The insertion among the praises of the 5th king SCANDA-GUPTA, of the epithet “a mangler of the flesh of the refractory,” (*avinama-pala-sátá*,) and that in close juxta-position with the attributes of peculiar wisdom, and adherence to a mysterious system of Cabalistic theology,—may appear surprising to persons who have either considered but slightly the genius and tendencies of idolatry, or are unacquainted with this peculiar form of it. To shew how perfectly natural is the juxta-position in the present instance, I cannot give a more generally intelligible proof than in the picture drawn in the metaphysical drama *Prabodha-chandra-udaya*, of a votary of this same Tantric discipline, under the name of SA-UMA-SIDDHÁNTA,—i. e. says the

commentator, a professor of the science of SIVA BHAIRAVA in conjunction with UMA his consort.—I will give the original Sanscrit and Pracrit (the latter spoken by the Buddhist, being his own Páli,—the former by the other two speakers) with a different version from that of Dr. TAYLOR, distinguishing prose and verse exactly as in the original: premising, that the ingenious author does not intend to give any exaggeration or caricature, but simply to exhibit a model of an existing mode of belief and practice in his time: such as may be traced also, under certain modifications even now; after centuries of Mahomedan and Christian rule have interfered with the free exercise of such homicidal worship.

ततः प्रविशति सोमसिद्धान्तः कापालिकरूपधारी खड्गहस्तः

[परिक्रम्य] नरास्थिमालाकृतचारुभूषणः

प्रसन्नानवासी नृकपालभाजनः ।

पश्यामि योगाङ्गनशुद्धदर्शने

जगन्मियोभिन्नमभिन्नमीश्वरात् ॥

क्षपणकः । एसो काबालिअवदं पुलिसो धारेदि ताणं पुच्छिस्सं

[उपसृत्य] अले काबालिअ गलहड्डुमुण्डमालिअ केलिसे तुअः
सोखमोक्खे ।

कापालिकः । अरे क्षपणक धर्म्मं तावदस्माकमवधारय ।

मस्तिस्त्राक्तवसाभिघारितमहामांसाज्जतीर्जुङ्गतां

वज्झै ब्रह्मकपालकल्पितसुरापानेन नः पारणा ।

सद्यः कृतकठोरकण्ठविगलत्कीलालधारेत्यनै

रर्थो नः पुरुषोपहारबलिभिर्देवो महान् भैरवः ॥

भिक्षुः । [कथं पियाय] बुद्ध बुद्ध अहो दारुणा ब्रह्मचर्या ।

क्षप । अलिअन्त अलिअन्त अहो घोरपावकालिना केनावि विप्पलब्बा
एसो बलाओ ।

कापा । [सक्रोधं] आः पाप पाषण्डापसद मुण्डितमुण्ड चण्डालवेश केशो

ल्लुञ्चक अरे विप्रलम्भक स किल चतुर्दशभुवनोत्पत्तिस्थितिप्रलय

प्रवर्त्तयिता वेदान्तसिद्धान्तप्रसिद्धविभवो भगवान् भवानीपतिः ।

दर्शयामस्तर्हि धर्म्मस्यास्य महिमानं ।

हरिहरसुरज्येष्ठश्रेष्ठान् सुरानहमाङ्गये

वियति चरतां नक्षत्राणां रणध्वं गतीरपि ।

सनगनगरीमम्भःपूर्णां विधाय महीमिमां

कलय सकलं भूयस्तीयं क्षणेन पिबामि तत् ॥

क्षप । अल कावालिअ अदोज्जव भणामि केणावि इन्द्राालिना अलीअं
इन्द्राालं दिशिज विप्ललब्धो सित्ति ।

कापा । आः पाप पुनरपि महेश्वर ऐन्द्रजालिक इत्याक्षिपसि तन्न
मर्षणीयं ते दौरात्म्यं । तदहमस्य

एतत्करालकरबालनिकृत्तकण्ठ

नालोच्छलदङ्गलबुद्बुदफेणिलौघैः ।

दत्त्वा बलिं डमरुडं कतिहृतभूत

वर्गाय भर्गगृहिणीं रुधिरैर्घिनेमि ॥

[इति खड्गमुद्यच्छति ।]

IN ACT III.

To them, enter SOMA-SIDDHANTA in the guise of a Kápálīka (or man of skulls),
with a sword in his hand.

Soma-Sid. (walking about.)

With goodly necklace deck'd of bones of men,
Haunting the tombs, from cups of human skull
Eating and quaffing,—ever I behold
With eyes that Meditation's salve hath clear'd,
The world of diverse jarring elements
Composed, but still all one with the Supreme.

Buddhist. This man professes the rule of a Kápálīka. I will ask him what it
is.—(Going up to him.) O, ho! you with the bone and skull necklace, what
are your notions of happiness and salvation?

Soma-Sid. Wretch of a Buddhist! Well; hear what is our religion.

With flesh of men, with brain and fat well smear'd,
We make our grim burnt-offering,—break our fast
From cups of holy Bráhma's skull,—and ever
With gurgling drops of blood that plenteous stream
From hard throats quickly cut, by us is worshipped
With human offerings meet, our God, dread BHĀIRAVA.

Bráhma Mendicant, (stopping his ears.) Buddhist, Buddhist, what think you
of this? O horrible discipline!

Buddhist. Sacred Arhata! some awful sinner has surely deceived that man.

Soma-Siddhanta (in a rage). Aha!—sinner that thou art,—vilest of heretics,
with thy shaven crown, drest like the lowest outcasts, uncombed one, away
with thee! Is not the blessed husband of BHĀVANI the sole cause of the
creation, preservation, and destruction of the fourteen worlds, and his power
established by the fullest demonstration of the Védant? Let us yet shew
even you the magnificence of this religion.

I call at will the best of gods, great HARI,
And HARA's self and BRAHMA,—I restrain
With my sole voice the course of stars that wander
In heaven's bright vault; the earth with all its load
Of mountains, fields and cities, I at will

Reduce once more to water—and behold

I drink it up.

Buddhist. Alas ! poor Kápalika, this is just what I said. You have been deceived by some juggler, spreading out false images before you.

Soma-Siddhanta. What, again, thou sinner ! Dost thou dare to call the great

MAHESVARA a juggler ? This thy malignity must not be forgiven. Lo, therefore,

With foaming floods of gore that gush amain

From throat well severed with this sabre's edge,

I make my sacrifice to him that calls

With beat of drum the hosts of creatures after him,

Dread SIVA—and with these rich ruddy streams

Delight his consort well, BHAVANI.

(*Draws his sword.*)

[How the hand of the Tantric zealot is arrested from smiting the unfortunate Buddhist,—how he then enters on a psychological defence of his opinions,—how he is then joined by SRADDHA' (or Faith !) in the character of a *Kapalini*, who by her blandishments leads both the Bráhman mendicant and the Buddhist, to deport themselves like Tantrists,—and how they all then join SOMA-SIDDHANTA in a meditative dance ;—all this and other wonders may be found by the curious in the drama above cited.]

NOTE B.

In once more expressing the opinion, that the Gupta dynasty of our present monuments is posterior to the Christian era, I am by no means insensible to the new light that Mr. TURNOUR has thrown on the history of SANDRACOTTUS in the extracts he has given from a learned commentary on the *Mahá-wanso*, pp. lxxi—lxxxii. of his very interesting preface to that great historical work. That some of my objections to the identity of the two CHANDRA-GUPTAS are removed, or at least greatly weakened, I freely admit : there certainly appears ancient Buddhist authority (for such is apparently the *Atta-kathá* or *Astata-kathá* of the Uttara-vihára priests alleged by the commentator) for making the Mauryas a branch of the Solar race ; utterly inadmissible as is the etymology assigned for that name in the *Tiká* (p. lxxvi.) as well as for the name of SISUNÁGA, ancestor of the Nandas, (pp. lxxii. lxxiii.) It is also very remarkable, in relation to this subject, that the latter prince is there represented as the son of a LIÇÇHAVI Rája, that being apparently the name of a distinguished family in *Magadha* : LIÇÇHAVI being also the name, in the inscriptions of *Allahabad* and *Bhitári*, of the father-in-law of our CHANDRA-GUPTA I. and maternal grand-father of SAMUDRA-GUPTA. Nevertheless, there still appear to me insurmountable objections to identifying SAMUDRA-GUPTA with VINDU-SÁRA, the son and successor of CHANDRA-GUPTA MAURYA on the *Magadha* throne. while a still more evident impossibility is now added of identifying his son, the *Vaishnava* CHANDRA-GUPTA II. of our present monument, with ASOCA, son of VINDUSÁRA, the zealous ad-

herent and propagator of Buddhism, not only in his own dominions of *Magadha*, but the north, east, and south, as far as *Ceylon*. It is needless to pursue the discrepancy of the genealogies further: the *Vaishnava* CUMÁRA-GUPTA and the *Saivya* and *Saktya* worshipper, SCANDA-GUPTA, have nothing in common with the Buddhist descendants and successors of DHARMÁSOKA. Is it not also very possible that with a view to exalt the immediate ancestry of that most revered prince, the priests of the favored religion may have introduced this account of the *Moriya* family, as an offspring of the Solar race,—so discrepant from that which other Indian accounts, as well as Greek and Roman, give of its origin? That the Buddhist priests, notwithstanding their hostility to caste, are not insensible to considerations of this kind, is evident from the care with which, in the *Mahá-wanso* and elsewhere, they inculcate the undoubted royal descent of GAUTAMA BUDDHA.

NOTE C.

The passage above quoted from the Vishnu-Purána seems to have been somewhat differently read by the more modern author of the *Srímád-Bhágavata*,—who here as elsewhere, is apparently only transferring into his own more polished and elaborate verse, the records found in the older Puránic legends. By him the term Gupta, instead of being a proper name, is made an epithet of the *earth* as ruled or *protected* (for so the scholiast SRIDHARA has explained it) by the VISVA-SPHATIKA above mentioned, who is here called VISVA-SPHURJÍ. The close agreement, as well as occasional discrepancy, of the two authorities, will be easily seen from the following extract (*Bhágavata*, Book xii. chap. 1.)

मागधानां च भविता विश्वस्फूर्जिः पुरंजयः
 करिष्यत्यपरान् वर्णान् पुलिन्दयदुमद्रकान् ॥ २० ॥
 प्रजाञ्चाब्रह्मभूयिष्ठाः स्थापयिष्यति दुर्मतिः ।
 वीर्यवान् क्षत्रमुत्सार्य पद्मावत्यां स वै पुरि ।
 अनङ्गंगामाप्रयागं गुप्तां भेक्ष्यति मेदिनीं ॥ २१ ॥

“VISVA-SPHURJÍ, another PURANJAYA, (i. e. says the scholiast, the best of the descendants of PURANJAYA or RIPUNJAYA, who was king of *Magadha*, B. C. 900,) shall create new barbarian castes, the *Pulindas*, *Yadus* and *Madras*. This ill-minded warrior shall make the greatest part of his subjects to be un-bráhmancial, (or lower than sudras)—and having exterminated the Xattriyas, he shall, in the city of *Padmávatí*, and on the Ganges, as far as *Prayága*, derive tribute from the *protected earth*.”

The words अनुगंगाप्रयाग are explained here by the scholiast to describe the situation of the king's metropolis *Padmāvati*, as being situated in the Ganges *above Prayāga*, or, as he words it, between *Allahabad* and *Haridvár*. But this explanation is quite inapplicable to the same words as they stand in the *Vishnu-Purāna*, where they immediately follow the mention of *Mathurá*, and where the mention of *Magadha* following induces me to interpret the words "on the Ganges *below Prayāga*" or between *Allahabad* and the sea.

II.—*Alphabets of the Tai language. By the Rev. N. BROWN, Missionary in Assam.*

[We are indebted to Capt. F. JENKINS, Political Agent in *Assam*, for kindly engaging Mr. BROWN to throw light upon the *Ahom* and *Khamti* alphabets, of which it may be remembered Capt. JENKINS two years ago presented to the Society some manuscript volumes then undecipherable for the want of this indispensable key. The *Ahom* letters are stated to be copied from an old book in the author's possession. The brief notice of the language itself, (Mr. BROWN writes to Capt. J.) was gathered from a pandit of the *Jorhát* Rája, whom he employed as teacher for a few months. He did not seem to possess a very perfect knowledge of the *Ahom* language, and he stated that the same was true of the *Ahoms* in general, who for the most part have lost all knowledge of their original tongue.

Captain JENKINS thinks there can be little doubt that the *Ahom* rajas came into *Assam* from the eastward about the beginning of the thirteenth century; and that the immediate cause of their emigration is to be sought for in the breaking up of the Chinese empire by the Moguls,—for at the epoch when ЧУКАРНА had fixed himself in *Assam*, KUBLAI KHAN had just established himself in *China*. We may confidently hope that after a little longer residence at *Sadiyá*, Mr. BROWN, who is rapidly extending his acquaintance with the different branches of the *Shyán* language will be induced to favor us with a sketch of the contents of the old *Ahom* chronicles, which, we are given to understand, certainly exist in *Assam*, and of which the volume transmitted by Capt. JENKINS may be a portion.

Capt. JENKINS alludes to a curious fact, communicated by Mr. BROWN, which should be a further inducement to examine their books; namely, that no trace of Buddhism is to be found in the religion of the *Ahoms*. This is a remarkable deviation from the circumstances

of the other *Shyán* families whose literature is but a direct translation of Burmese Buddhism, as their alphabets, the *Shyán*, *Khamtí*, *Láo*s, &c., are seen to be mere modifications of the Burmese or *Páli* alphabet.

This fact would seem to argue that the emigration of the *Ahoms* from their own country *Siam*, had taken place prior to the introduction of the Buddhist religion into that country—but how can this be reconciled with the date of *CHUKAPHA*?—ED.]

The Language of the Ahoms.

The *Ahom* is a branch of the *Tai* language, which is spoken, with some variations, by the *Khamtis*, the *Shyáns*, the *Láo*s, and the *Siamese*, all of whom designate themselves by the general appellation of *Tai*. Among the *Ahoms*, or that portion of the *Tai* race inhabiting *Assám*, the language is nearly extinct, being cultivated only by the priests, as the ancient language of their religion; while their vernacular and common dialect, as well as that of the people, is *Assámese*. As the *Ahoms* once ruled over *Assám*, it is somewhat surprising that more traces of their language are not to be found in the present dialect of the *Assámese*, which contains very few words of *Tai* origin.

As might naturally be expected, the *Ahoms*, from disuse of their original tongue, have lost many of its peculiar sounds. In conformity with the pronunciation of the *Assámese*, they give to *w* the sound of *b*; and *y*, they pronounce as *j* or *z*. The sound of the French *u*, which is so common in the *Tai*, they change sometimes to *ú* and sometimes to *í*. The *intonations* of their original tongue they have entirely lost; one reason of this undoubtedly is, that these *intonations* were never expressed by the *Ahoms* in writing. The same is at present the case with the *Khamtis* and *Shyáns*, who have no characters expressive of their *intonations*, having, like the *Ahoms*, adopted the *Burman* alphabet, which is inadequate to meet the wants of the *Tai* language in this respect. The *Siamese* characters, on the contrary, represent the tones with the greatest precision.

It is, however, remarkable that the language of the *Ahoms* as pronounced by the priests, corresponds to the *Siamese* with much greater exactness in some respects, than any of the *Shyán* dialects spoken between *Assám* and *Siam*.

1. The sound of *b*, frequent in the *Siamese* and *Láo*s, is converted into *m* by all the *Shyáns*, while the *Ahoms* have preserved the regular *b*.

2. The *Siamese* *d* is changed by the *Shyáns* to *l*, and by the *Khamtis* to *n*, but the *Ahoms* give it its correct pronunciation.

3. The same is true of the letter *r*, which the *Shyáns* change to *h*.

4. Where double consonants, as *kl, pl, kr*, &c. occur at the commencement of a word, as they frequently do in Siamese, the Shyáns and Khamtis, as well as the Láos, soften the pronunciation by omitting the second consonant; but it is preserved by the Ahoms. I will illustrate each of these remarks by a few examples.





Siamese.	Láos.	Shyán.	Khamtí.	Ahom.	
1. Bá	bá	má	má	bá	a shoulder.
Bán	bán	mán	mán	bán	a village.
Bin	bin	mín	mín	bin	to fly.
Bo	bo	mo	mo	bo	a well.
2. Dí	dí	lí	ní	dí	good.
Deng	deng	leng	neng	deng	red.
Doi	doi	loi	noi	doi	a mountain.
Dáu	dáu	láu	náu	dáu	a star.
Düan	dün	lün	nün	dün	the moon.
3. Rak	rakorhak	hak	hak	rak	to love.
Rái	rái	hái	hái	rái	bad.
Ron	ron	hon	hon	ron	hot.
Rú	rú	hú	hú	rú	to know.
Rüa	rü	hü	hü	rú	a boat.
Rüan	rün	hün	hün	rün	a house.
4. Plá	pá	pá	pá	plá	a fish.
Klai	kai	kai	kai	klai	distant.
Klúa	kü	kü	kü	klú	salt.
Plüak	pük	pük	pük	plúk	a husk.

From these circumstances we may conclude that the Siamese and Ahom dialects afford a more correct specimen of the original Tai language, than either the Láos, Khamtí, or Shyán; for it is improbable, if the original forms had been simple and easy of enunciation, that they would have been exchanged for others more difficult; but it is perfectly natural that difficult forms should be exchanged for others more simple.

Explanation of the Table.

It is probable that all the alphabets of the Tai, (if we except the Siamese,) were formed from the Burman. The column of Burman letters is merely added for the purpose of comparison. The Ahom, Khamtí, and Shyán alphabets each contain eighteen letters, but this number is quite inadequate to express the various sounds of these languages. The Láos alphabet is more perfect: it contains fewer letters, however, than the Siamese. In the above table we observe that the Láos alphabet contains, to some extent, two distinct characters for each letter of the Ahom and Shyán; one denoting the rising, and the other the falling tone*. The rising-toned letters are set first

* The second column of the Láos consonants embrace the second order or the softer sound of each class of the Indian alphabets, *g gh; j jh; d dh; b bh*, &c.: the *gh* only is formed differently from the same letter of the Burman alphabet. We have inserted these letters in the Roman column on the above

in the column ; those on the right hand have the falling tone. Several of the falling-toned letters have no corresponding character for the opposite intonation ; when it is required to express this, an *h* is written above the letter, which raises its tone ; thus,  *ng*,  *n*,  *m*,  *l*, &c. A similar plan is adopted in the Siamese, where the high-toned *h*, is prefixed to other consonants for the purpose of raising their tone.

The pronunciation of the fourth letter in the table is not uniform ; the Siamese give it the sound of *ch*, the Láos nearly the same, while all the Shyáns pronounce it as *st*. The next letter, *chh*, is confounded by the Shyáns with *s*. The character for *ph* is used, by the Ahoms and Shyáns, to express both the aspirated *p* and the sound of *f* ; the Khamtis for the most part confound these two sounds. The Ahoms use the same character for both *d* and *n* ; and also for *b* and *w* ; but the latter sound is changed to that of *b*, whenever it occurs at the beginning of a word.

In the table of vowels we also find the sounds represented more fully by the Láos than by the northern tribes ; though the Láos are still behind the Siamese in expressing the niceties of the language. The sounds resembling the French *u* and *eu*, or the German *ü* and *ö*, are written alike by the Shyáns, though they are perfectly distinguished in pronunciation ; as also the sounds of *ai* and *ái* ; *au* and *áu* ; *eu* and *iu*. The sound *aü*, which is very common among the Shyáns and Khamtis, does not occur in the Láos. Its place is supplied by *ai*. The long *ó* final of the Shyáns is generally pronounced *óa* or *úa* by the Láos and Siamese. The Shyán character given in the table is that used in the neighborhood of *Ava* ; it is the same, with very slight variations, as that used by the Shyáns of *Mógaung*.

NOTE. At the foot of the alphabetical scheme, lithographed from Mr. BROWN's manuscript, we have inserted the Ahom legend of an Assamese rupee, said to be of CHAKRADWAJA SINHA, who repulsed AURANGZEB's general, and whose reign commenced in 1621*. The sculptured letters differ considerably in form from the written ones, and there is too much uncertainty for us to attempt applying the Roman character to it, without a native at hand to correct the reading.


We have also given in the two following plates, facsimiles on a reduced scale of the commencement of the manuscript volumes in the grounds ; but the pronunciation must of course, under the author's explanation, be restricted to the sounds of the first column *k kh* ; *ch chh* ; *t th* ; *p ph*, &c. ; with the rising or falling intonations respectively.—EDV.

* See page 118 of Chronological Appendix.

from a manuscript of 10 pages, in the Asiatic Societys library.

full size

full size.



Khamtí and Ahom characters, above alluded to as presented by Captain JENKINS. The former commences with an invocation to *Buddha* in the Páli language and Burmese character, but there are several grammatical errors committed by the Khamtí copyist—the line should run

နမောတဿ ဘဂဝတော အရဟတော သမ္မာသမ္ဗုဒ္ဓဿတိ
ဇယတုသဗ္ဗမဂ္ဂလံ

Namotassa bhagavato arahato sammá sambuddhassa ití jayatu sabba mangalam.

Praise to the divine object of worship, the omniscient Buddha; through whom may all happiness conquer.

We hope that Mr. BROWN will enable us to insert a translation of the Khamtí and Ahom texts in a future page.—ED.

III.—Remarks on the Silk Worms and Silks of Assam. By Mr. THOMAS HUGON, Sub. Asst. Nowgong.

[Communicated by Capt. F. JENKINS, Pol. Agent in Assam.]

The following worms producing silk are found in *Assam*. The mulberry worm (large and small), the *eria*, the *mooga*, or *moonga*, the *kontkuri*, the *deo mooga*, and the *haumpottonee*. The five last are indigenous to the country, but there are no reasons to suppose that the first is likewise so. The mulberry is scarce, and none is found in the wild state. The time of the introduction could be, perhaps, ascertained in some of the Assamese *booronjees* or chronicles—(which I was unable to procure immediately to ascertain the point); some of them extending several centuries back—as the Assamese got religious instructors from *Bengal*, it is very probable they also got from there the mulberry tree and worm. The use of the silk being confined to the *rája* and grandees, and the rearing of the worm to one caste, are additional proofs that its introduction did not precede that of Hinduism—the *joogees* (the caste alluded to) must evidently have come up with it; the Assamese refuse to rear the silk worm, but not having this objection to the other worms would be one proof of the latter being indigenous, were it doubtful.

Mulberry worm.—The management of these worms in *Assam* is nearly similar to what it is in *Bengal*. They are reared within doors, and require the same care and attention as are bestowed on them there; a separate hut is used, which is fitted with bamboo stages with a passage between them and the outer wall—these huts are built north and south with a single door on the east side; this is generally the case, but by no means a fixed rule amongst the Assamese; only one female of the family goes into the house, and previous to doing

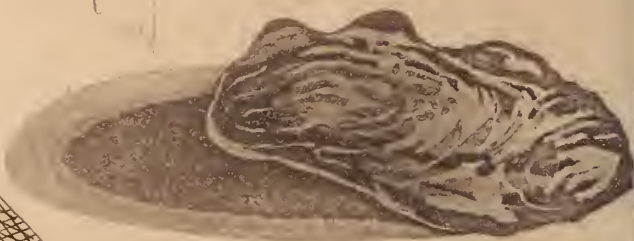
it alway washes her hands and feet. With the Assamese the idea prevails as in other parts, that the eye of the stranger is hurtful—their account of this is, that the worms, fancying the stranger is criticising them, get sulky, abstain from food and die.

The large and small mulberry worms are reared in *Assam*. I will describe the rearing of those which produce only one bund a year, (the larger,) they being more in use than the others in this district. It will be sufficient to shew how far the process assimilates to that followed in *Bengal* and other parts. The moths are made to deposit their eggs on pieces of cloth—these are packed up with the household clothing; when the time of hatching approaches (December), they are taken out and exposed to the air; when the worms are hatched they are fed the first three or four days on the tender leaves cut up, in new earthen pots; then on a bamboo tray. After the first moulting they are removed to the *mutchang* (*machin*) or stages. When they are about beginning to spin, they are put on bamboo trays fitted up with pieces of matting fixed perpendicularly at intervals of two inches: these in the first afternoon are exposed for half an hour to the side where the sun is shining, and afterwards hung up in the house. After leaving as many as are required for breeding, those that are to be wound off, after having been exposed to the sun for three or four days, are put over a slow fire in an earthen vase full of water. One person winds off the silk with an instrument made of three pieces of stick joined together thus, the perpendicular one is held at one end with the right hand, and the left directs the thread over the cross bars—taking care in doing this to make it rub against the fore-arm to twist it—whilst another person attends to the fire and the putting on new cocoons. When a sufficient quantity for a skein has thus accumulated it is taken off the cross bars.

There are hardly any plantations of mulberry in *Assam*, on such a scale as to be worth mentioning; a few men of rank have small patches of it, sufficient to produce silk for their own use;—the few ryuts that sell the silk generally have not more than a seer to dispose of in the year,—the produce of a few plants round their huts or in the hedges of their fields. The leaves are not sold as in *Bengal*, and when a ryut's own supply fails, he obtains it from neighbors who have a few trees merely for the fruit. The worms are reared by *joogees* alone, people of an inferior caste:—those of the highest can cultivate the plant and do all the out-of-door work—but none but a *joogee* can, without degradation, attend to the worms or touch the silk whilst reeling. As the same prejudice does not exist in *Ben-*



Cocoon



Chrysalis



5th Stage



4th Stage

2nd Stage

3rd Stage

gal, it must have been kept up purposely by the despotic rulers of the country, after mulberry cultivators were introduced, to ensure the use of the silk being confined to themselves and their courtiers—a selfishness which may be observed in many of their rules and prohibitions: this alone would have been a bar to the extension of the cultivation of the mulberry in *Assam*, were there not already greater facilities of obtaining silk from the *mooga* and *eria* worms. No mention is made of silk in the returns of the Hydra chowkey, I do not think half a maund of it altogether is exported in any shape—the price of it is eight or ten rupees a seer, but it is not readily procurable. Mr. Scott, a few years ago, introduced from *Rungpoor*, reelers, reels and plants of the *morus alba*, and established a factory at *Darang*, with a view to extend the culture of mulberry silk, and improve the reeling of the *mooga*. Several causes rendered the experiment abortive, the want of European superintendence and Mr. Scott's untimely death being the principal ones*.

Eria silk.—The *eria* worm and moth differ from the mulberry worm and moth in every respect, as will be better understood by the accompanying drawings and insects: like it, however, it goes through four different moultings, but its sickness in doing it lasts only twenty-four hours; the last stage takes eight days, the others four. The duration of its life varies according to seasons: in summer it is shorter, and the produce both greater and better; at this season, from its birth to the time it begins its cocoon, twenty to twenty-four days expire, in fifteen more the moth comes forth, the eggs are laid in three days, and in five they are hatched, making the total duration of a breed forty-three to forty-seven days: in winter it is nearly two months; the number of breeds in the year are reckoned at seven.

This worm is, like the mulberry worm, reared entirely within doors: it is fed principally on the *hera* or palma-christi leaves, it eats the mulberry leaf also but is said to prefer the former; when the palma-christi leaves fail, they are also fed on those of several other trees known in this part of *Assam* by the following names:—

1. Kossool.
2. Hindoo gass.
3. Meekeerdal.

* From the opinions given by several merchants of *Calcutta* on samples of *Assam* mulberry silk, reeled on Italian reels from worms properly fed and attended to, I am led to believe this province exceedingly favorable to the production of very superior silk.—The samples sent down would have fetched the highest prices in the *Calcutta* market, and they were got up under the unfavorable circumstances of a rude experiment.—F. JENKINS.

4. Okonnee.
5. Gomarree.
6. Litta Pakoree.
7. Borzonolly.

The worms thrive best and produce most when entirely fed on the palma-christi—it is the only plant which is cultivated purposely for it, there is hardly one ryut who has not a small patch of it near his house or on the hedges of his fields—it requires little or no culture—the ground is turned up a little with the hoe and the seeds thrown in without ploughing; whilst the plant is young it is weeded once or twice, but it is afterwards left to itself. The plant is renewed every three years. On the leaves of Nos. 1 and 2, worms can be reared entirely, but they do not thrive well upon it, many die even after having begun the cocoons, and the few of these that are got are small and yield but little. These and the others are only used in the fourth or fifth stage when they are considered to answer quite as well as the palma-christi leaves. The *kossool* (No. 1) alone can be given alternately with the palma-christi. The whole of these trees are found in the forests, but not cultivated.

To breed from, the Assamese select cocoons from those which have been begun in the largest number on the same day—generally the second or third day after cocoons have begun to be formed—those that contain males being distinguished by a more pointed end. These cocoons are put in a closed basket and hung up in the house out of reach of rats and insects. When the moths come forth they are allowed to move about in the basket for twenty-four hours; after which the females, (known only by the larger body) are tied to long reeds or canes, twenty or twenty-five to each, and these are hung up in the house. The eggs that have been laid the first three days amounting to about two hundred are alone kept, they are tied in a piece of cloth and suspended to the roof until a few begin to hatch—these eggs are white, and the size of turnip seed; when a few of the worms are hatched, the cloths are put on small bamboo platters hung up in the house, in which they are fed with tender leaves; after the second moulting they are removed to bunches of leaves suspended above the ground, under them upon the ground a mat is laid to receive them when they fall; when they have ceased feeding they are thrown into baskets full of dry leaves, amongst which they form their cocoons, two or three being often found joined together.

The caterpillar is at first about a quarter of an inch in length, and appears nearly black; as it increases in size it becomes of an orange color, with six black spots on each of the twelve rings which form its body.

The head, claws and holders are black ; after the second moulting they change to an orange color, that of the body gradually becomes lighter, in some approaching to white, in others to green, and the black spots gradually become the color of the body ; after the fourth and last moulting the color is a dirty white or a dark green : the white caterpillars invariably spin red silk, the green ones white. On attaining its full size the worm is about three and half inches long : unlike the *mooga* caterpillar, its colors are uniform and dull, the breathing holes are marked by a black mark—the moles have become the color of the body, they have increased to long fleshy points, without the sharp prickles the *Mooga* worm has ; the body has a few short hairs, hardly perceptible.

In four days the cocoons are complete ; after the selection for the next breed is made, they are exposed to the sun for two or three days to destroy the vitality of the chrysalis. The hill tribes settled in the plains are very fond of eating the chrysalis—they perforate the cocoons the third day to get them, they do the same with the *mooga* and sell few cocoons imperforated.

The cocoons are put over a slow fire in a solution of potash, when the silk comes easily off : they are taken out and the water slightly pressed out : they are then taken one by one, loosened at one end and the cocoon put over the thumb of the left hand, with the right they draw it out nearly the thickness of twine, reducing any inequality by rubbing it between the index and thumb ; in this way new cocoons are joined on. The thread is allowed to accumulate in heaps of a quarter of a seer : it is afterwards exposed to the sun or near the fire to dry ; it is then made into skeins with two sticks tied at one end and opening like a pair of compasses : it is then ready to be wove unless it has to be dyed.

The dyes used are lac, munjeet and indigo, and the process of dying is as follows.

Red Dye.—The lac after having been exposed to the sun to render it brittle, is ground and sieved as fine as possible : it is steeped twelve hours in water, after which the thread is thrown in with the leaves of a tree, called by the Assamese *Litakoo*—(*Pierardia sapida* ? F. J.) When it has absorbed most of this mixture, it is taken out, put over two cross sticks, and shaken a short time to detach the threads well from each other : it is dried in the sun and the same process again gone through twice. When it is wished to increase the brightness of the color, it is again dyed with munjeet : the latter is dried in the sun and ground in the same way, it is steeped for forty-eight hours ; the threads are put in and boiled in the same way, but with the leaves of a

different tree (the *Koh*): the thread is dried in the sun, and is ready for use. Nearly the same process is gone through for the blue: instead of the common indigo, they sometimes use the *Room*, which plant is, I believe, *Ruellia callosa*—also the leaves of a very large tree found in the forests, called by them *Ooriam*. The thread is wove as cotton. The different prices of the cloths and their use will be found in an annexed table; their clothes are mostly used for house consumption, a few are bartered with the Bhotias and other hill tribes. Large quantities were formerly exported to *Lassa* by merchants, known in *Derung* as the “*Kampa Bhotias*,”—the quantity they used to take away, was very considerable, but in the latter years of the *Assam* rāja’s rule, from the disorganized state of the country, the number of merchants gradually decreased; three years ago only two came after a long interval, one of them died, and I believe the trade has not again been revived: those two merchants complained that they could no more procure the cloths suited to their markets. No exports of it are mentioned in the returns of the *Hydra-chowkey*. The quantity the country is capable of exporting under an improved management would be very large, for it forms at present the dress of the poorer classes at all seasons, and is used by the highest for winter wear.

I have been unable yet to ascertain the quantity of this silk obtainable from one acre of land, no man can tell me the extent of his plantation, or even the quantity of *Eria* thread he got in a year beyond this, that he had enough for the use of his family; every ryut has a few plants round his house or farming hedges—which would at most amount to the twentieth part of an acre; so that for this to afford clothing for a family the produce must be very large indeed.

Mooga Silk.—Although the *mooga* moth can be reared in houses, it is fed and thrives best in the open air and on the trees. The trees which afford it food are known in *Assam* by the following names:—

1. Addakoory.
2. Champa, (*Michelia*.)
3. Soom.
4. Kontooloa.
5. Digluttee, (*Tetranthera diglottica*, HAM.)
6. Pattee shoonda, (*Laurus obtusifolia*, “*Рохв*.”)
7. Sonhalloo, (*Tetranthera macrophylla*, “*Рохв*.”)

Silk from No. 1. Addakoory.—The Addakoory, the worms fed on which produce the *Mazankoory mooga*, is a middle-sized tree, used for rearing worms only when under four years. It sprouts up where forests have been cleared up for the cultivation of rice or cotton. The worms that are put on the tree on the first year of their appearance

above the ground produce the best silk. The second year the crops are inferior in quality and quantity, and the third it is little if at all superior to the common *mooga*. The *Mazankoory* silk is nearly white, and its value fifty per cent. above that of the common fawn-colored.

The tending of the worms on this tree is much more laborious than on any of the others: young trees only being used, they have to be constantly removed to fresh ones: the smoothness of the bark also renders it necessary to help them in moving from branch to branch. This tree is more abundant in *Upper* than in *Lower Assam*—last year it was for the first time found to exist in the forests of the *Morung*, on the eastern boundary of this district: the Upper Assamese who are settled throughout this district (they form one-fourth or one-fifth of our population here), have never met with it in any other place.

No. 2. *Champa*.—The *Champa* is found, as the *Addakoory*, where forests have been cleared: the silk of the worms fed on it is called “*Champa pootia mooga*.” It is held in the same estimation as the “*Mazankoory* ;” I do not know whether it is also used when young—the tree is not met with in *Lower Assam*.

No. 3. *Soom*.—The *Soom* is found principally in the forests of the plains and in the villages, where the plantations of this tree are very extensive. It attains a large size and yields three crops of leaves in the year: the silk produced by it is of a light fawn color, and estimated next to the *Mazankoory*: the plantations are most abundant in the eastern half of this district.

No. 4. *Kontooloa*.—This is a large tree found both in the hills and the plains—also a few in the villages: the leaves are too hard for young worms: they are reared on the preceding (No. 3), till the third moulting, and then put on this tree; by which process the silk obtained is stronger than that from worms reared entirely on the *Soom*.

No. 5. *Digluttee*.—A tree of a small size not much used on that account: the silk equal to that obtained from No. 3.

No. 6. *Pattee shoonda*.—Middle-sized tree, found principally in forests—few to be met with in the villages of *Lower Assam*—used when the leaves of No. 3 are done.

No. 7. *Sonhalloo*.—The *Sonhalloo* is found in the forests of the hills and plains, where it attains a very large size: it is also found in the villages, where in six years it attains its full growth (thirty feet); it is very abundant in the western portion of this district. *Rara*, *Jumna*, *Mookh*, *Jyntea*, and the valley of *Dhurmpoor*—at the latter place, where the hill tribes of *Mikirs* and *Kacháris* clear dense forests for the cultivation of rice and cotton, numbers of the plants spring up

spontaneously. After three or four years when the land getting poorer requires more tillage and the use of the plough, these tribes who only use the *kar*, or hoe, remove to new forests and leave behind them plantations of these trees, which they have used during the short period they have remained. To them, the ryuts of the more settled parts resort in the spring to rear up worms: the silk of the Son-haloo-fed worm is considered inferior to the preceding—more I believe from its darker color than any other cause.

There are generally five breeds of *mooga* worms in the year, they are named after the months at which they generally occur.

1. *Jarooa*, in January and February.
2. *Jeytooa*, in May and June.
3. *Aharooa*, in June and July.
4. *Bhodia*, in August and September.
5. *Khotia*, in October and November.

The first and last are the best crops as to quality and quantity. Nos. 3 and 4 yield so little and so inferior a silk, that they may be said to be merely for the purpose of continuing the breed. Were the Assamese acquainted with the process of retarding the hatching of the eggs as is practised in *China*, in regard to the mulberry silk-worm, they would, I think, find it more advantageous to have only three or four crops.

The same rule is followed in the selection of cocoons to breed from as in the *Eria*. They are put in a closed basket suspended from the roof: the moths as they come forth having room to move about, after a day the females (known only by their larger body) are taken out and tied to small wisps of thatching grass, taken always from over the hearth—its darkened color being thought more acceptable to the moth. If out of a batch there should be but few males, the wisps with the females tied to them are exposed outside at night: the males thrown away in the neighbourhood find their way to them: these wisps are hung on a string tied across the house to keep them from the lizards and rats. The eggs laid during the first three days (about 250) are the only ones thought worth the keeping: those laid on the two or three subsequent days are said to produce weak worms. The wisps are taken out morning and evening, and exposed to the side where the sun is shining: ten days after the laying of the eggs, a few of them are hatched: the wisps are then hung up to the tree, the young worms finding their way to the leaves—care must be taken that the ants have been destroyed, their bite proving fatal to the worm in its early stages. To effect this they rub the trunk of the tree with molasses and tie to it fish and dead toads. When large

numbers have been attracted to one place they destroy them with fire ; this they do several times previously to the worms being put on ; the ground under the trees must be kept clear of jungle to make it easy to find the worms that fall down—young trees are preferable until the second moulting.

To prevent the worms coming to the ground, fresh plantain leaves are tied round the trunk, over the slippery surface of which they cannot crawl. They are removed to fresh trees on bamboo platters tied to long poles.

Bats, owls, rats, are very destructive at night : in the day the worms require to be constantly watched—crows and other birds being so fond of them, that they lie in wait in the neighbouring trees. An old lady's doze over her morning " canee" (opium), however short, is sure to be fatal to several worms—the *goolail* which is always at hand often punishes the thief, but the mischief is done.

Numbers are destroyed in the more advanced stages by the sting of wasps—and by the ichneumon insect which deposits its eggs in their body. These are hatched when the cocoon is half formed : they perforate it at the side and the chrysalis is found dead : the worms which have thus been stung are known by black marks on their body. Were the people more careful in their management, this would be of little consequence : by making these worms spin apart, the cocoon being formed before the chrysalis is killed, the silk could be saved.

The worms thrive best in dry weather : but a very hot sunny day proves fatal to many at the time of moulting. At these periods rain is very favorable, thunder storms do not injure them as they do the mulberry worm ; continual heavy-rains, (which are rarer in *Assam* than in *Bengal*) are hurtful by throwing them down—showers, however heavy, cause no great damage, they taking shelter under the leaves with perfect safety. The worms during their moultings remain on the branches, but when about beginning to spin they come down the trunk, the plantain leaves preventing their going further down they are collected in baskets, which are afterwards put under bunches of dry leaves suspended from the roof—they crawl up into these and form their cocoons—as with the *Eria* several are often joined together. The silk of these they spin instead of winding : above the plantain leaf a roll of grass is tied for those that come down during the night to begin spinning in—after four days the selection of cocoons for the next breed is made and the rest wound off.

The total duration of a breed varies from sixty to seventy days. The period is thus divided—four moultings, with one day's illness attending each, 20

From fourth moulting to beginning of cocoon,	10
In the cocoon,	20
As a moth,	6
Hatching of the eggs,	10
	<hr/>

66

On being hatched the worm is about a quarter of an inch long, it appears composed of alternate black and yellow rings; as it increases in size the former are distinguished, as six black moles, in regular lines on each of the twelve rings which form its body. The colors gradually alter as it progresses, that of the body becoming lighter, the moles sky-blue, then red with a bright gold-colored ring round each. When full grown the worm is above four inches long; its colors are most brilliant and varied in shades: the body appears transparent and is of a very light yellow or dark green color, with a brown and a yellow streak at the sides; in the latter the breathing holes are distinguished by a black speck: the moles are red and have each four sharp prickles and a few black hairs: the head and claws are of a light brown, the holders green and covered with short black hair; the last pair have a black ring on the outside. On being tapped with the finger the body renders a hollow sound; by the sound it is ascertained whether they have come down for want of leaves on the tree, or from their having ceased feeding.

The chrysalis not being soon killed by exposure to the sun, when they have many cocoons they put them on stages, cover them up with leaves and burn grass under them; the cocoons are then boiled for about an hour in a solution of the potash made from the dried stalks of rice, they are then taken out and laid on cloth folded over to keep them warm; from this they are taken as required and thrown in hot water (not over the fire) after the floss has been removed with the hand. The instrument used for winding off the silk is the coarsest imaginable: a thick bamboo about three feet long is split in two, and the pieces driven equally in the ground two feet apart: over the interior projection of one of the knots is laid a stick, to which is fixed, a little on one side, a round piece of plank about one foot in diameter—the rotary motion is given by jerking this axle, on which the thread rolls itself: in front of the vessel holding the cocoons a stick is fixed horizontally for the thread to travel upon. Two persons are employed—one attending the cocoons, the other jerks the axle with the right hand and with the same hand directs the thread up the left forearm, so that it is twisted in coming down again towards the hand; the left hand directs the thread over the axle. Fifteen cocoons is the



The Three Silk moth
Bombyx religiosæ



Cocoon



Moonga Silk worm
and moth



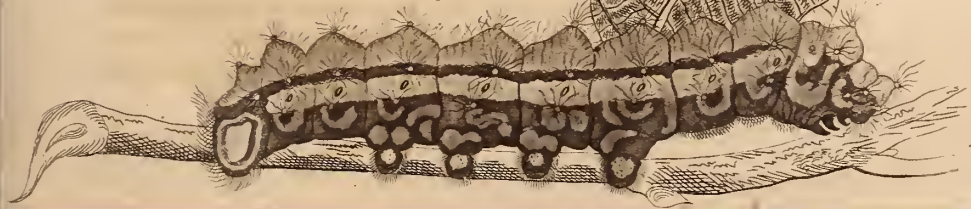
Chrysalis



1st Stage

3rd Stage

5th Stage



smallest number they can wind off in one thread, twenty the number generally; even the last is often broken from the coarseness of the instrument used, although the fibre is much stouter than that of the mulberry silk. When nearly a quarter of a seer has accumulated on the axle, it is dried in the sun and made into skeins of one or two rupees weight. This is done with a small bamboo frame set in motion by the common spinning machine of the country: if it has to be dyed the same process is followed as with the *Eria*. The cloths usually made of *mooga* and their use will be found in the annexed table: besides those, I have seen it used as the warp with cotton, and the cloth so made is a little lighter color than nankin and much stronger; but this is seldom done, from the trouble of spinning the cotton fine enough. Cotton twist adapted to that purpose would, I think, meet a ready market.

The exact quantity of silk which an acre of *mooga* trees can produce could not be ascertained without a trial. Fifty thousand cocoons per acre*, which makes upwards of twelve seers, are considered by the Assamese a good yearly return. Sixty rupees the value of twelve seers must be a very profitable one, for there is little labor or expense to the ryut in making or keeping up a plantation: whilst the trees are young, the ground is available for cultivation besides rearing worms; sugar-cane, rice, pulse, &c. are cultivated with benefit rather than injury to the young trees. The tax is fourteen annas the acre in this district. The great value of the *mooga* is, that it enables the weaker members of a family to contribute as much as the most robust to the welfare of the whole. Besides attending to the worms most of them weave, spin or make baskets, while watching them.

From causes which I have been unable to ascertain, and of which the natives are ignorant, the *mooga* some years failed so completely in particular districts that none was left to continue the breed. There being very few weekly *hauts* or markets to resort to, to procure cocoons for breeding from the more fortunate people of other districts, a failure of this kind in one place is sensibly felt for two or three years after in the production. The time of the ryut, who has at most half or a quarter of an acre of *mooga* trees, is too valuable to allow of his being absent for a month and more, going from village to village, and house to house to find out the people who have cocoons for sale. This last season in our *Jumna-múkh* (Cachar) pergunnah the *mooga*

* An Assamese Poorah of land is a little more than an English statute acre, and such lands hitherto have not been taxed, or at a very low rate, if cultivated with other crops besides the *mooga*.

was a complete failure; there are no worms on the trees now, from inability to procure cocoons, although there was a very abundant crop in two pergunnahs at the opposite end of the district.

The *mooga* plantations are principally round the ryuts' houses, and are included in house-lands. By this year's measurement of the Barree lands in the three divisions of the *Nowgong* zillah where the land tax obtains, the quantity in actual occupation (exclusive of those which being unclaimed have reverted to the state) amounts to 5350 acres: the proportion of *mooga* plantations is upwards of one-fourth or 1337 acres. In the five other divisions of the same zillah, which are three times the area, and have more than double the population, but of which we have no accurate measurements, I will only venture to estimate the quantity of *mooga* plantations at half that of the other three or about 600 acres, but on this low calculation there would be a total of 2000 acres for *Nowgong*. Estimating the plantations of the *Derung* and *Kamráp* zillahs at only 1500 acres each, there would be a total of 5000 acres of those plantations in *Lower Assam*, exclusive of what the forests contain of them: this quantity is capable of producing in one year 1500 maunds. In *Upper Assam* I understand the plantations are more extensive than ours.

4. *Kontkúrí Mooga*.—This worm feeds on many trees besides the "*mooga* trees;" it is found oftener on the *bair*, (*Zizyphus jujuba*,) and the *seemul*, (*Bombax heptaphyllum*,) but not in great quantities. The worms, moths and cocoons are considerably larger than any of the others; indeed the cocoon is the size of a fowl's egg. Several Assamese told me they had vainly attempted to domesticate them; the eggs have been hatched, but after observing the worms for a few days on the trees they have at once disappeared. They attributed this to its being a "dewang" or spirit; the real cause may probably be its being fond of changing its food, and gifted with greater locomotive powers than the generality of the silk-worms. I have been told by some Bengalees that it is found in *Bengal* in the wild state on the "*bair*" as in *Assam*, and called "*Gootee-poka*;" it is there reeled off like the mulberry silk and much valued for fishing lines, but not wove, probably from its scarcity. The fibre is stronger than that of the *mooga* and of a lighter color.

5. *Deo Mooga*.—I accidentally became acquainted with this worm, which is very little known to the natives and entirely in the wild state. Three years ago being employed in *Jumna-múkh* (*Cachar*), I had occasion to take some bearings, for which purpose I had a white cloth put up on a large "*Bur*" tree, (*Ficus Indica*;) the year after, being near the same spot, the ryuts came and told me that two months after

I left (April), they observed that the tree had lost all its foliage, they went to it and found in the surrounding grass and dry leaves, a large number of small cocoons; these they spun like the *eria* out of curiosity and used it with the latter. They took no further notice of succeeding breeds, finding the thing of little present use. I lost a few cocoons which I procured at the time, but have lately seen both the worm and the cocoon, the former is quite different from any other; it is more active, its length is under $2\frac{1}{2}$ inches, the body very slender in proportion to its length, the color reddish and glazed. I could not observe them more particularly, as they were brought to me one evening at dusk: I put them in a box, with the intention of examining them the next morning, but they disappeared during the night, although it was open very little to admit the air. The moth is very much like that of the mulberry, so is the cocoon also in appearance, color and size; I have questioned many of the natives about this worm, but none had ever seen it before—their opinion of it is that it is a “dewang” (spirit) brought there by the prismater compass and the white flay—this made them call it *deo mooga*.

The *haumpottonee*, a caterpillar very common in *Assam* (and elsewhere perhaps), may also be mentioned as one of the varieties of the species, although it forms but a very imperfect cocoon: it feeds on most leaves. I have had no opportunity yet of observing it myself; but am told by the natives that it goes through similar stages to the others; the worm is about two inches long, of a brown color and covered with hair, the moth of the same color as the *mooga* moth but only half the size; the cocoon has this peculiarity, that it is quite transparent, so that the chrysalis can be seen inside; at one end of it a small opening is left—the cocoon is of a yellow color—it can be spun like the *eria* cocoon, but the Assamese do not use it, on account of its silk causing a severe itching in wearing.

I have questioned several Bengalees settled in *Assam* and who have been at *Midnapur*, regarding the identity of the *mooga* and *tussur*; they say that the worm is the same, but that at the latter place they are fed on a different tree: the point could be better ascertained by a comparison with the drawings and preserved worms which accompany these remarks. The Burmese envoys who have just left *Assam* told me that the *mooga* was unknown in their country previous to the conquest of *Assam*; but that it had since been introduced by the Assamese who were carried off and settled in the Burmese territory: the *Cacharis* also admit that it is not many years since it was introduced into *Cachar*, (south of the hills.) In *Cooch Behar* both it and the *eria* are almost unknown to this day; the prevailing opinion amongst the natives of

these parts is, that both species (*mooga* and *eria*) are indigenous to *Upper Assam* and were introduced from thence. It has always appeared to me that the production of these silks is greater as one advances to the east—it is to this day procurable more abundantly in *Upper Assam* than any where else, especially in the district of *Lukinpoor* on the north bank of the *Burhampootur*.

Little *eria* is exported, but the *mooga* forms one of the principal exports of *Assam*; the average of the quantity passed at *Gowalpara* during the two last years that duties were levied, was two hundred and fifty-seven maunds, valued at fifty-six thousand and fifty-four rupees: it leaves the country principally in the shape of thread. Most of it going to *Berhampoor*, it is probable that the cloths made from it pass under the name of *tussur*; the latter as far as I recollect, appears to have less gloss. The *Hydra chowkey* returns comprise only the products exported by water. The total quantity that leaves the province may, I think, be estimated at upwards of three hundred maunds, for *mooga* forms also a portion of the traffic with *Silhet* (across the hills) the *Cassyas*, *Bhotias*, and other hill tribes. The Assamese generally keeping more for their own use than they sell, the total quantity produced in the province may be reckoned at six or seven hundred maunds. It has been in great demand in *Bengal*, for within the last few years, although the production has been greater from the more settled state of the country, the price has risen 20 per cent. When I first arrived in this district, it could be obtained without difficulty from the ryuts at three and a half to four rupees the seer; now it is difficult to procure it at five rupees. The competition is so great, that the traders pay for it in advance, not as with other products, to get it at a lower rate, but merely to secure their getting it. This competition is also owing to the greater number of small traders who resort to the province since the abolition of chowkeys—which may have caused a rise on the price of the product in *Assam* without a corresponding increase in the exports.

No gradual improvement can be traced in the mode of rearing the several worms or winding their silk—it is now what it was a century ago, there being no European speculators in *Assam*, nor it being probable that when any venture so far they would readily risk the capital in quite a new branch of industry. This important product of the country is likely to remain for years unimproved, unless the subject should again be taken up by Government. The small factory set up by the late Mr. Scott, to which I have before alluded, was kept up too short a time to have had any perceptible effect. Mr. Scott's declining health and numerous duties never allowed him to give it a

moment's personal attention, nor could his assistant do it, having then the same work to do which now employs several officers; the factory was therefore left entirely under the direction of natives. These, to add to their own importance, rather increased, than alleviated the fears that the Assamese, (who had labored under so many restrictions,) naturally entertained of imitating or using any thing pertaining or appropriated to the "Rája;" such a presumption in the good old times might have cost a man his ears or his nose. The residence of European officers in different parts of the country having undeceived the people as to those restrictions, there would be now great facilities in introducing improvements—although the ryuts individually have not the means of getting reeling machines, however simple and cheap, they would, as with sugar-mills, club together to obtain them, were it only shewn to them that there was any advantage, in the use of them. *Mooga* thread is every day increasing in value; I have marked its rise from three rupees eight annas, to five rupees in the short space of three years; in *Gowalpara* it sells at six rupees eight annas or seven rupees; in *Dacca* and *Moorshedabad* at eight rupees. This is, I believe, not more than thirty per cent. below mulberry silk in *Calcutta*; the primitive process of the Assamese which I have described will, perhaps, shew a possibility of this difference being made up by superior management. The *mooga* silk could be used in colored fabrics, being easily dyed. In its natural fawn color it stands washing much better than silk, keeping gloss and color to the last; the natives bleach it with a solution of the potash made from plantain trees, this they also use in washing their cloths, both cotton and silk: soap was unknown previous to the British occupation of the country.

Another object of great interest, which might become of great importance to this province, is, to ascertain the possibility of rendering the *eria* marketable in some shape or other; the way of preparing it (already described,) is such that the cloth made of it when new looks as rough as "taut" (or gunny); it is only by repeated washings that it attains a softness of feel and gloss which approach that of silk. It is highly improbable that amongst the natives, repeated trials should not have been made of reeling instead of spinning these cocoons, but from their failing it would be wrong to lay it down as an impossibility: they have merely tried it as other cocoons and given it up when they found that the fibre "did not come," as one of them told me. I had it tried before me with a few cocoons, but with the greatest care the fibre could not be drawn off beyond a few yards without breaking, the cause of this appeared to me to be a greater adhesiveness in the fibre than with other cocoons, it was drawn off with diffi-

culty and with a crackling noise—until it brought several layers with it, from which it could not be detached without breaking, some thing may perhaps be hereafter found to reduce that adhesiveness. It is, I think, unlikely that the worm should spin in a different way from all others, allowing this to be the case, great improvements could be made in the spinning, by, no doubt, the introduction of the process in practice in Europe to spin perforated cocoons, from its cheapness it would perhaps be advantageously used with wool—especially in stockings, it would add softness and gloss without taking from the warmth, the cocoons costing only one rupee, the thread two rupees per seer.

Although I have been unable to form an estimate of the land taken up on the cultivation of the “*hera*” or palma-christi, a very rough one could be made of the total quantity of *eria* silk produced by referring to the population; it being the daily wear of the poor, and besides, being used by every class in winter. The population is reckoned at 455,000*, therefore estimating the yearly consumption of each individual at the lowest, the total quantity produced would be upwards of 1000 maunds, most of this could be exported if it acquired the least additional value by better management, and be replaced by other manufactures and by an increase in the growth of cotton. The product would keep pace with any increase of demand, for there is hardly a house in the country where these worms are not reared.

Being acquainted only with central *Assam* and this district in particular, *Upper Assam*, the Moamariya country, the Bhotan territories in the plains are left out of these remarks and estimates†. Although the population assimilates, in many respects they may differ in their different processes. I have used as few local terms as I could except with regard to the tree and plants whose botanical name I have not been able to ascertain.

P. S. In the within Mr. HUGON has said nothing of another silk worm which was lately discovered on a pipul tree (*F. religiosa*)—and of the moth of which a drawing accompanies with three or four cocoons, a chrysalis and two moths. This looks very like the mulberry moth, but I am not able to say whether it is or not. The silk looks very fine

* By the statistical report of 1835,—Kamroop district,	280,000
Dorung ditto,	95,000
Nowgong ditto,	80,000
† The population of <i>Upper Assam</i> is estimated at,	220,000
Moamariya,	50,000

270,000

Toolaram's country, Jyntia, }
 Bhotan territory in the plains, } no estimate is ever made.

and it may be considered a curiosity even if it be the produce of a mulberry worm, for the question arises on what was the worm fed?—if on the *F. religiosa*, it is, I believe, a discovery, that the silk worm would feed on the leaf of any tree but the mulberry; if the worm is distinct from the *Bombyx mori* it is a still greater curiosity.

Mr. HUGON has been unable to determine whether the worm now alluded to, is the same as the *deo mooga* mentioned within: he is inclined to think not from the color of the cocoons and the slight observations he was able to make on the latter; but from both feeding on the leaves of two trees so nearly allied, I should suppose it likely that the worms were identical. It would be a discovery of some importance to find worms affording any tolerable silk that fed on these species of *Ficus* which are so abundant here.—F. JENKINS.

List of the Cloths made in Assam of Mooga and Eria Silks.

Names of Cloth.	Size in Cubits.	Weight.		Price of Thread.	Cost of Weaving	Total.	Remarks.
		Seer.	Chk.	R. A. P.	R. A. P.	R. A. P.	
<i>Mooga.</i>							
Soorias, . . .	7 by 1½	0	6	1 14 0	0 3 0	2 1 0	} Dhoties.
Ditto,	16 „ 2	1	0	5 0 0	0 8 0	5 8 0	
Mekla, . . .	5 „ 1½	0	4	1 4 0	0 2 0	1 6 0	} Petticoats.
Rhia,	12 „ 1½	0	8	2 8 0	0 4 0	2 12 0	
Gaursha, ..	8 „ 1	0	2	0 10 0	0 1 0	0 11 0	} Scarfs.
							} Worn as turbans or round the waist.
Joonta Bor							} Made of the floss and worn in winter.
Cappor, ..	12 „, 2½	1	0	2 0 0	0 6 0	2 6 0	
<i>Eria.</i>							
Bor Cappor,	16 by 3	1	8	3 0 0	0 8 0	3 8 0	} Worn in winter and used as a blanket, also made into coats.
Meklas,	5 „, 2	0	6	0 12 0	0 2 0	0 14 0	} Used only by the poorer class.
Rhia,	10 „, 1½	0	8	1 0 0	0 2 0	1 2 0	
Gaursha, ..	8 „, ½	0	4	0 8 0	0 2 0	0 10 0	

Memorandum upon the specimens of Silk, and Silkworm from Assam,
by W. PRINSEP, Esq.

The *mooga* or *tussur* cocoons, are very fine, particularly those fed from the *soom* and the *sohaloo* trees which are superior to the produce of the jungles about *Bankoora*.

The thread from these worms, is quite equal to that which is used in the best *China* *tussur* cloths.

The specimens of cloth wove from these threads, are not equal, however, either to the *Bengal* *tussur* cloth, nor to the *China* cloth of the same description.

The *eria* cocoon, thread, and cloth are all new to us: I have never seen them in *Bengal*, except now and then a few pieces of the cloth

imported from *Rungpur*; it appears to be more cottony than the tussur, and to make a web warmer and softer than the tussur cloth, but it is not so strong.

The cocoons called *haumpottonee* are unknown to us in *Bengal*, and appear to be of small value both as to quantity and texture: moreover I imagine it would be very difficult to reel them into thread.

The *deo mooga* cocoons are very small but are fine and soft, and when fresh would yield, I doubt not, a very delicate white thread: they are smaller than our *dèsee* (country) cocoon.

The specimen of country worm silk is very fair, and if dressed would be quite equal to our *Patna* thread, from which korahs and other silk piece goods are made.

The specimen of iron reel (or station method) is very good, indeed, equal to our best native filature letter A: the thread is even, soft, sound and remarkably strong, so that it may be well ranked with our best second quality from the filatures of Bengal.

IV.—On the indigenous Silkworms of India. By T. W. HELFER, M. D. Member of the Medical Faculties at the Universities in Prague and Pavia, Member of the Entom. Society in Paris, &c.

[Read at the Meeting of the 4th December.]

Silk was in all times an article of the greatest importance throughout the ancient world.

China gained its celebrity in the classical time of the ancients, as the mother-country of that mysterious texture, which it manufactured from time immemorial, with a high degree of perfection, and called *se* or *ser*; whence all India and its eastern unknown boundaries derived the name *Serira*.

It made the satraps of the western world, the rulers of *Rome* and the emperors of *Byzant*, envious of its possession, and the home brought golden fleece of the fabulous Argonauts, was perhaps nothing else than the precious web of the *Bombykia*.

The emperor JUSTINIANUS got an insight into the secret by two adventurous Persian monks, who brought the eggs of the Chinese silkworm in a hollow bamboo cane, safe over the icy chains of the *Himálaya*, the barren plains of *Bokhara*, and the rugged mountains of *Persia*, to the distant eastern capital. He considered it a point of great importance to reserve to himself the monopoly of such a precious article, though master of the riches of his vast empire.

The Sicilians in the time of ROGER the first, became a wealthy people by its introduction into *Palermo*—the Venetians were enabled by the trade of silk chiefly, to build their immortal maritime bulwark, and in our days the introduction and manufacture of silkworms is a source of unlimited riches to the countries of *Europe*, where it is cultivated on a large scale.

To elucidate this it may be observed, that *France* alone exported in the year 1820, wrought silk to the value of more than 123 millions of francs.

The importation of raw and worked silk into *England*, amounted to 4,547,812 pounds in the year 1828, of which about 1,500,000 pounds were brought from *Bengal*, 3,047,000 pounds were, therefore, brought from foreign countries, chiefly *Italy* and *Turkey*.

The northern parts of *Europe* and chiefly *England* are less suited for its cultivation on account of climate.

Great Britain, *France* and *Germany*, finding by experience, that the demand is constantly greater than the supply, resorted to different substitutes.

Different substances presenting analogies to that beautiful filament were examined. The spider's web was tried in *France*, first by Mr. BON; but Mr. REAUMUR found that the war-like propensities of the *Arachnidæ* hindered their being reared in great numbers, and this enterprize has been in our days entirely abandoned.

Men resorted to the *Mollusca* and found that the maritime *pinna* gives a filament like silk, having the power to produce a viscid matter which it spins round the body. A beautiful and very durable silk was produced from it, the Byssus of the ancients, but it was always dearer than the common silk of the *Bombyx mori*, and though to this day caps, gloves and stockings are woven from it in *Calabria* in *Sicily* (I saw myself a considerable manufacture of it in *Palermo*), it will probably remain for ever a matter of curiosity rather than an article of general use.

In *Germany* endeavours have been made in the time of ROESET, and recently in *Styria*, to make silk from the cocoons of the *Saturnia pyri*, a moth which is common in *Austria* and in the subalpine parts of the *Tyrol* and *Switzerland*: but hitherto the experiments have been too few; more particularly, as I heard, on account of the delicate caterpillar, which dies if not fed with the greatest promptitude with the under leaves of different kinds of pear trees.

A discovery, therefore, which promises to prove not so abortive as those now quoted, must be of the greatest importance.

The vast provinces of *India* are rivalled in variety, preciousness

and perfection of their productions, only by those of the celestial empire. Now in the hands of an enlightened benevolent government, they will probably surpass it in a short time, when its natural resources, daily more conspicuous, shall be discovered, examined, and brought in to general use.

As in *China*, so in India, silk has been produced since time immemorial: not the silk of the later introduced mulberry caterpillar, but the silk from various indigenous cocoons, which are found only and exclusively here.

The first notice of these, but only in a cursory way, has been given by the father of Indian botany, Dr. ROXBURGH, in the Transactions of the Linnæan Society, vol. vii.

He there mentioned only two species, the *Phalena (Attacus) (Saturnia) paphia* and *Phalena cynthia*. Since that time no further attention has been paid to this subject except that Dr. BUCHANAN, in his description of the district of *Dinajpur*, says, that another silkworm is reared on the castor oil plant for the domestic use of the natives.

From the moment of my arrival in India, I had paid an unremitting zealous attention to the productions of Botany and Zoology, and had been so happy to identify in the course of two months, two other species of the genus *Saturnia* which yield silk, one from *Silhet* the other from *Bankoora*. Just at this time Mr. JAMES PRINSEP received from Captain JENKINS in *Assam*, a memoir by Mr. HUGON on the silkworms of that newly acquired, remarkable province, establishing six different kinds of silkworm: the cocoons of four of which are now transformed into silk by the inhabitants of *Assam*, and to my great joy and surprise, I found that three of them are different from the well known *Bombyx mori*, and from the two other indigenous which are worked in Bengal.

These recent discoveries merit particular attention. India has thus the internal means of providing the whole of *Europe* with a material which would rival cotton and woollen cloth, and would be preferred in many cases to both, if brought within the reach of every one by a lower price: and an unlimited resource of riches and revenue might be opened under proper management.

May it be now permitted to me to go through the numerous different species of India which actually produce silk of which seven kinds have never been mentioned before.

1. *Bombyx mori*, the mulberry silkworm, which has been probably introduced as the mulberry seems to be an acclimated plant, is too well known to deserve a particular mention.

2. The wild silkworm of the Central provinces, being described

as a moth not larger than the *Bombyx mori*. I could not yet procure specimens of it : probably there are several species of *Bombyx* confused, as the silk, which sometimes comes in trade, varies considerably.

3. The Joree silkworm, *Bombyx religiosa*, mihi.—I am sorry to say that the specimens of this interesting moth have been destroyed on their way from *Assam* to *Calcutta*, so that I am obliged to make a superficial description from the accompanying drawing, (Pl. VI.) excluding a diagnostical analysis.

Genus, Bombyx.

Length about $1\frac{1}{4}$ of an inch.

Antennæ, pectinated.

Head, small, covered.

Eyes, very large, brownish black.

Palpi, unknown.

Thorax, subquadrate, covered with thick brownish grey hair, with a black band separating the abdomen from the thorax.

Abdomen, represented as having eight segments ?

Legs, unknown.

Wings, upper wings very short (in ♀ imperfect) triangular, with the acute angle outward. The interior side emarginated. Of a light grey color which darkens towards the extremity.

An interrupted whitish band on the lower margin with a large whitish speck towards the ends.

Lower wings uniformly brown.

The cocoon of this silkworm shows the finest filament, and has very much silky lustre. It is exceedingly smooth to the touch and very different from the cocoon of the mulberry tree.

This discovery of Capt. JENKINS is very interesting, as it yields a silk if not superior yet certainly equal to that of *Bombyx mori*.

It lives upon the pipul tree, (*Ficus religiosa*.) Its general introduction would be very easy, as the pipul tree grows abundantly over all India.

Specimens of cocoons sent a second time by Captain JENKINS, convince me that the *Joree* and *Deo-mooga* are the same species.

4. *Saturnia Silhetica*, mihi. (Longitudo pollices novem, sive lineas 108 alarum superiorum expansarum.)

Diagnosis. Pectinicornis, alis superioribus apice recurvata falcatis, inferioribus oblongis. Alis superioribus maculis duabus fenestralibus, internâ triangulari magnâ alterâ externâ multo minori oblongâ, inferioribus maculâ eâdem unâ versus corpus triangulari magnâ. Colore cinamomeis lineis variegater albidis in medio ad marginem externam flavis.

Eggs, larva, and chrysalis, unknown.

Imago. Description.

Head, projecting with a crest of yellow hairs.

Eyes, middle-sized, light brown.

Antennæ, pectinated, about five lines broad, yellow.

Palpi, four, not covering the inner vermilar, brownish colored.

Mouth, hidden, without proboscis.

Thorax, obovate, clothed in a velvet-like purplish fine hair of the same color as the wings.

Abdomen, very short, clothed with much finer and lighter hair than the thorax.

Legs, hairy, yellow, equal.

Tarsi, moderately incurved.

Wings, horizontal expanded, with strong ramifications of the central muscles and tendons.—*Superior pair* of a cinnamon color. The end much curved, the upper margin with a beautiful velvet-like grey belt. Fan edges very much concave, the exterior extremity of a beautiful rose color. The inferior margin darker yellow, with an undulating narrow thread-like black line, losing itself towards the exterior extremity. In the centre is the eye, peculiar to all saturniæ, with micaceous transparency, triangular, with the sharp angle towards the body, another small oblong transparent point behind it, both with a dark brownish margin round it. *Inferior or second pair*, in point of distribution of colors the same; in form, much more convex, oblong. The hair very thick and long towards the body, and more particularly towards the point of insertion. The black line is not undulated, but follows the shape of the wing, and has at each side of the projecting tendons two black oblong spots, circumscribed with light yellow.

Habitat in the Cassia mountains in *Silhet* and *Dacca*, where its large cocoons are spun to silk. A particular description of the process is wanted.

5. A still larger *Saturnia*, one of the greatest moths in existence, measuring ten inches from the end of one wing to the other, observed by J. W. GRANT, Esq. in *Chirra Punjee*, seen in the possession of the late Dr. JAMES CLARK. I have not yet seen the animal.

6. *Saturnia Paphia*, Linn. Syst. Nat. 2, p. 809, 4. *Phalæna Mylitta*, DRURY, vol. ii. t. 5, f. 1, Mar. ROXB. Trans. Linn. Soc. vol. vii. p. 33.

The Tusseh Silkworm.

It is the most common in use of the native silkworms. The cloth so commonly worn by Europeans also in this country, comes from this species; J. W. GRANT, Esq. had the kindness to procure me, in

the month of September, more than 3000 cocoons, which I permitted to slip out, and had ample opportunity of studying them.

MICHAEL ATKINSON, Esq. from *Jangypur* says, that this species cannot be domesticated, because the moths take flight, before the females are fecundated. This is against my experience : I kept them under a musquito curtain to prevent their evasion, there they were impregnated readily by the males, and deposited every where many thousand eggs, and the young caterpillars issued the tenth day. Therefore the fear entertained of the difficulty in this respect seems to be easily overcome.

Hitherto has this silkworm never been reared, but millions of cocoons are annually collected in the jungles and brought to the silk factories near *Calcutta*, for instance *Dhaniakhali* ; but the principal place of their manufacture is at *Bhagelpur*. In other parts as at *Jangypur* the people gather them from the trees and transplant them on the Assem tree, (*Terminalia alata*, Roxb.) which growing near the houses enables them easily to watch the caterpillars, which are eagerly searched out and devoured in the day time by crows, and at night by bats, &c.

The natives distinguish two varieties, the bughy and the jaroo, but they are the same species.

They feed most commonly in the wild state on the bair tree, (*Zizyphus jujuba*.) but like also and indeed prefer the *Terminalia alata* and *Bombar heptaphyllum*.

This is the same moth which is also found sometimes in *Assam* and which Mr. HUGON calls *Kontkurí mooga*.

Though it was known in *Europe* by the publications of Dr. ROXBURGH and Dr. BUCHANAN, that the *Tusseh* and *Arrindy* silkworms are existing and indigenous, yet, strange enough, it was hitherto unknown, (at least with us on the continent,) that for some years past, their silk was only in small quantity exported to *England*; this silk having been considered as an inferior quality to that produced by *Bombyx mori*. The question of the possibility of acclimation of these larvæ in other congenial climates has ex ipso never been raised.

7. Another *Saturnia* distinct from all others (alis inferioribus in caudam desinentibus) ; it resembles some species which I saw brought from *Seva*, ? *Java*.

I could only procure the wings of this remarkable insect.

The moth comes from the neighborhood of *Comercolly*.

8. *Saturnia Assamensis*, (mihi.)—Long. alar. sup. extensarum 60—65 linear.

Diagn. Pectinicornis, alis superioribus apice acutis subfalcatis, in inferioribus subtriangularibus maculis duabus subcircularibus non diaphanis luteis. Color lateritis—luteus, nebulis sparsis obscuris lineis semicircularibus versus corpus duabus albis fasciâ albidâ brunneâ versus marginem inferiorem.

Eggs, larva, and chrysalis, not seen living, but recognizable in the accompanying drawing. (See *Moonga moth*, Plate VI.)

Head, not projecting, with a tuft of reddish yellow hair.

Eyes, ordinary dark-brown.

Antennæ, pectinated in ♀, broader than usual in *Saturniæ*.

Palpi, four, covering the mouth which is invisible.

Thorax, square, half oblong, clothed near the head in a silverish grey color, forming a continuity of that in the upper margin of the superior wings, the behind part of the color of the wings.

Abdomen, more than two-thirds of the breadth of both wings in their natural position, likewise of the color of the wings.

Legs, slender, hairy, yellow, short.

Tarsi, slight and incurved.

Wings, horizontally expanded, with a strong tendon directing the membrane of the upper wings in their upper margin.

Both pairs of a dark yellow somewhat reddish color. The end in the male much curved, the upper margin half from the body, of a silver grey color. The exterior extremity scarcely differently marked; a brown slightly undulated band, accompanied on both sides by a white line, extends across the wings more than two-thirds below their insertion on the thorax. Several brown nuberculæ are to be observed between the divisions of each tendon. Two semilunar white lines are to be observed on the upper wings, and are absolutely on the lower ones towards the abdomen; the interior larger, inwards curved; the other shorter, outward bound. The two specks on the wings, peculiar to *Saturnia*, are almost semicircular, but not micaceous, diaphanous; but likewise clothed with yellow squamæ of a darker line (more in ♀) with a brown margin on the inner side. Through this distinguishing peculiarity this insect seems to make a transit to a next genus, though the drawing of the larva represents completely a *saturnia* caterpillar.

The cocoon of a yellow brown color differs in appearance from all the others.

We are indebted for the discovery of this very interesting insect to Captain JENKINS and Mr. HUGON. Its particulars are extensively described in Mr. HUGON's memorandum. This species has never been mentioned before, though the fabrication of silk from it seems to be very common amongst the Assamese.

9. *Phalæna Cynthia*, DRURY, 2, t. 6, f. 2. Cram. 4, t. 39, f. 4.

ROXB. Linn. Trans. vol. vii. p. 42. BUCHANAN,
Desc. Dinájpur, p. 214.

(BUCHANAN quotes it as *Phalæna Penelope* unde?)

The *Arrindy Arria*, or *Eria* silkworm (Pl. V.) is reared over a great part of Hindustan, but more extensively in the districts of *Dinájpur* and *Rangpur*, in houses, in a domesticated state, and feeds chiefly on the leaves of *Ricinus communis*.

The silk of this species has hitherto never been wound off, but people were obliged to spin it like cotton.

“It gives a cloth of seemingly loose coarse texture, but of incredible durability; the life of one person being seldom sufficient to wear out a garment made of it, so that the same piece descends from mother to daughter.”—(*Atkinson's letter to Roxburgh.*)

It is so productive as to give sometimes 12 broods of spun silk in the course of the year. The worm grows rapidly, and offers no difficulty whatever for an extensive speculation.

On account of the double profit which would be derived from the same area of land cultivating it with castor-oil plant, which produces oil and feeds the worm, an extensive cultivation of this species would be highly recommendable; and if also the cloth is of the coarsest nature, it is, on the other hand, very valuable on account of its durability. May it not be particularly well adapted to mix it in certain textures with cotton?

It is likewise an inhabitant of *Assam*, and Mr. HUGON's observations about this species form an interesting paragraph in his memorandum.

10. *Saturnia* (?) *trifenestrata*, mihi.—Longitudo lineas 24—28.

Diagnosis. ♀ obscure castaneo brunneâ versus finem albedo adpersâ, lineâ transversali albidâ, alis superioribus ad marginem externam fenestris tribus transparentibus lineâ diagonali versus corpus currentibus.

♂ luteus lineâ brunneâ transversali transversè super alas currente, alæ superiores margine externo fuscescentes.

Eggs, whitish-yellow; indented 1 line on the longer circumference.

Larva, unknown.

Chrysalis, unknown, (damaged.)

Cocoon, yellow, in a network, transparent, so that the cocoon in the inside is to be seen, of a remarkable silky lustre.

Imago. ♀ of an uniform brown color; towards the end of the wings the like with white flower powdered. An obsolete whitish line runs transversely. The most remarkable in this insect are three glass eyes on the upper wings, beginning from the tendon of the insertion lower than the middle of the wing, and running one behind the other inwards

towards the extremity of the body. The first looks like two, which run together, the second is the smallest.

† of a uniform yellow color, only the outward margin of the wings is brownish, and a transversal line turns over the wings. The glass eyes are wanted, one of the three is a vestige, instead of the two others are two brown spots to be observed.

In those specimens which I saw were gradual transitions from dark brown to light yellow in different individuals to be observed, but always were the females much darker.

This is likewise a valuable discovery of Captain JENKINS in *Assam*, where it lives on the soon tree, but seems to be not much used.

11. HENRY CREIGHTON, Esq. of *Malda*, mentions another silkworm :—

“There is a cocoon produced wild upon the mango tree, which the people of *Malda* gather and mix with *Arrindy* cocoons in spinning.” This species seems to have remained hitherto unobserved.

There is no doubt, that in India exist some more insects, which furnish this precious material. The repeated and so often frustrated endeavours of ingenious men in *Europe* would certainly find in India an ample and highly remunerating field in this branch of speculation.

It would be very interesting to collect all moths which form cocoons, amounting, to judge by analogy, probably to upward of 150 species, to watch their natural economy, and to send specimens of each cocoon to Europe, to be there attentively examined.

Many have made the objection that the silk of the Indian species is much inferior.

This is yet an undecided question. The mulberry silkworm degenerates if not properly attended to. What has been done to raise the indigenous species from the state of their natural inferiority? Very much depends upon the cultivation of the worms in houses; 2, the method of feeding them, selecting that vegetable substance, not which gratifies the best their taste, but which contributes to form a finer cocoon; and 3, from the first chemical operations employed before the working of the rough material. But even if the raw material would not be capable of a higher degree of cultivation, the demand for it would, notwithstanding, never cease in *Europe*. All silk produced in Hindustan has hitherto found a ready and profitable market in *Calcutta*, and the demand is always greater than the supply. And that really the roughest stuff of the *Arrindy* silkworm is appreciated in England, may I be permitted to conclude the present article with the following fact.

Mr. JOHN GLASS, the Surgeon of *Baglipur*, sent, in the beginning of this century, some of the *Arrindy* silk home, and he wrote :

“ I understand that some manufacturers to whom it was shown seemed to think that we had been deceiving them by our accounts of the shawls being made from the wool of a goat, and that this silk if sent home would be made into shawls equal to any manufactured in India.”

This will be sufficient to show the importance of this article, and that it merits highly the attention of the paternal Government of India, and of all patriotic institutions, particularly of the Asiatic Society in *Calcutta*, which has done hitherto so much for the promotion of science and knowledge, and consequently for the welfare of all nations.

V.—*Concerning certain interesting Phenomena manifested in individuals born blind, and in those having little or no recollection of that sense, on their being restored to sight at various periods of life. By F. H. BRETT, Esq. Med. Serv.*

When the profound and discerning Mr. LOCKE in his Essay on the Human Understanding asserted that ideas were not innate, he meant, no doubt, that so far as the mind's intercourse, in its present condition, with all objects submitted to it was concerned, its noble faculties were destined to be educated only by its legitimate objects of excitation through the medium of the senses appointed for that purpose. His eccentric comparisons of the mind to a dark room, a blank sheet of paper, &c., meant in reality nothing further.

It occasionally happens that in the course of very extensive practice we have opportunities of illustrating this, in cases of restoration to sight of persons born blind, and also in cases of individuals who have known and distinguished colors ; and “ then (as Mr. LOCKE expresses it) cataracts shut the windows,” and if restored to sight many years afterwards, they are in precisely the same situation as though they had never seen before, having not the slightest recollection or idea of colors any more than the individuals born blind. All is to be acquired “ *de novo*.”

I will particularize the following from amongst several which have occurred to me, as they may probably appear interesting to the Society when divested of all purely professional or surgical detail, which have already indeed been communicated to the profession.

No. 1.—The following is illustrative of the fact of all ideas of objects and colors having to be acquired, as well as a verification of the problem

contained in the 8th Section of the 2nd Book of Mr. LOCKE in his chapter on Perception. "Suppose a man born blind, and now adult, and taught by the touch to distinguish between a cube and a sphere of the same metal, and suppose the cube and the sphere placed on a table, and the blind man be made to see; (quære: whether by his sight before he touched them he could now distinguish and tell which is the globe and which the cube?) to which the acute and judicious proposer answered—No."

A pandit, 18 years of age, native of Saugor, was born blind; his mother states that she had kept him in a dark room until the 10th day of her confinement, when on taking him to the door and exposing his eyes to the light, she discovered the pearly appearance of the pupils peculiar to cataract, and that he has always been blind. He is intelligent and cheerful, and has been in the habit of finding his way about Saugor and the adjoining country for many years, frequently singing, of which he is very fond. He had little or no inclination to undergo the operation,—at least not sufficient to overcome the fear which he entertained. He could perceive the light, and had acquired the habit of rotating the head constantly in progression in a regular and curious manner to the right and left, with a view, I imagine, of admitting the light to the retina obliquely between the circumference of the cataract and the under edge of his iris. It was a long time before his relations could persuade him to submit to an operation. He had requested to be taken to me some months previous; was gratified at being told that he might be made to see like other people; but the slight inconvenience attending the introduction of a few drops of the solution of belladonna into the lids, and my holding the lids to try how they should be supported, annoyed him—and he said he would much sooner go home and eat his dinner. "What do I want with being restored to sight?" His mother likewise expressed her disbelief as to a person born blind being made to see. The principal pandit of the *muhallah* at length overruled the objections. The operation was performed on the 28th of August. He complained of but little pain, and indeed there was scarcely any inflammation whatever produced by the operation. He immediately became conscious of a considerable increase of light.

The eye-balls, as in all cases of congenital cataract, moved about without any control, which, together with a very prominent brow and much spasmodic action of the lids, offered some obstacles. So little irritation had occurred, that I operated on the 30th August on the left eye, which resembled the former operation in every particular. No inflammation followed, but the right eye had become inflamed, in

consequence of which his eyes remained bandaged for several days, and it became necessary to bleed him. He expressed himself as sensible of a remarkable change having taken place: the light was most distressing to him, and continued so for some time. On the eighth day the absorption had proceeded very satisfactorily: several substances of various colors were presented to him. He could not recognize any of them, until he had made himself acquainted with them by the sense of touch. He brought them very close to his eyes, moving his head in his accustomed peculiar manner. Whatever he attempted to reach, he always missed his aim. He expressed himself as highly gratified, and confident that he would see and know every thing, but did not like too much interrogation. On the 12th day he came to me again. The eye-balls were no longer rolled in their former vacant manner. He had acquired the power of directing the left eye, which had been most instructed, on objects; the right eye, from inflammation, having remained bandaged. A lady shewed him her shawl: he said it was red, which was correct; but did not know what it was, until examined by the hand. The platform in front of the house was recognized as green, and his mother said he had been examining many things at home. The absorption of the cataract has proceeded, leaving two-thirds of the pupil of the left eye quite clear; some inflammation still in the right. He said he was no longer afraid of me, and that he would submit to any thing I recommended. On the 16th of September he walked from the town to see me, accompanied by his mother. He had gained much information during his absence. The pupil of the left eye had become almost entirely clear. He said he had seen a great number of trees on the road, the lake, and a buggy passing by. He had made himself acquainted with several things. What is this?—A lota. This?—A pawn leaf. Which answers were correct. A small hooka was shewn him: he touched it, and was told what it was; several things were then presented to him and the hooka was again brought. He observed, “I cannot tell; you have submitted so many things to me, that I am confused, and forget their names.” He felt it and then exclaimed, it is the same hooka. Presently it was shewn him a third time; he recognized it after having carefully viewed it from top to bottom without touching. He observed a book, remarking that it was red; but he knew not that it was a book until told so. It was presented to him a few minutes afterwards, and he recognized both the color and the book. He said he was extremely happy and gratified with all he saw. He followed me with his eyes as I moved about the room, and pointed out the different positions I took. He

recognized distinctly the features of his mother's face. She hid it under her chadder; he laughed, and observed that she had done so, and turned his face away. He said, "I can see every thing; all I want more, is time to learn what they all are; and when I can walk about the town, I shall be quite satisfied." He could not ascertain whether any thing was round or square, smooth or rough. He distinguished the following: some partridges, the cage and the cup containing the water. The color of their plumage he correctly stated; also the windows, the fields, the sky, a child in arms, &c. On the 7th he again came to see me. He pointed out every feature in his mother's face, her hair, the color of her dress, the different distances and positions which she purposely took, and when changing places with another woman, selected her out. He stated that if I would bring the red book I shewed him yesterday, he would recognize it. I accordingly brought him a red morocco box much resembling the book, but smaller; he said it was the book! At this period his knowledge of the shapes of bodies and their sizes was very imperfect, especially the latter. He directed his hand straight to whatever things were now presented before him. The last time I saw him, a small ivory looking-glass, a paper-cutter, and a cut jelly-glass, were placed on the ground; they were shifted and changed, and he distinguished each respectively. He was much amused and laughed heartily. I gave him the looking-glass, in which he noticed his face, and said it was like other people's, *achchha*.

It will appear, therefore, that his judgment of distances, colors, notions, and positions, was very considerable. That of size and form was to be acquired more tardily.

From this period I quitted Saugor, and have heard nothing further of him.

No. 2.—The next is a similar instance of an individual who had never seen before,—a Brahman boy of 10 years of age, residing at the *Kherie Pass*, near the *Dehra* valley.

A few days after the first operation when the bandages were removed, the principal circumstance worthy of note was the confusion and embarrassment of the mind, arising from new and unaccustomed impressions and the dazzling influence of light.

On the seventh day he had acquired some voluntary power over the ball of the eye, being able to steady it somewhat, and fix it on any object he wished to discern, but only for a few moments. He had after repeated practice acquired a knowledge of most colors, but it was not until the twenty-sixth day from the first operation that he could be said to have a tolerable acquaintance with the visible world. Dur-

ing this period, when the absence of pain and inflammation permitted, (for it was necessary for him to undergo several operations,) the bandages were removed before and after sunset, and his attention was directed to men sometimes standing, sometimes moving; also to the tent, sky, trees and their foliage, animals of different kinds, the colors and figures and motions of which he was able in time to discern.

There was no correspondence, however, for a long while between the sight and touch, neither did he for several days direct his eyes straight to objects so as to examine them minutely. At night he would contemplate the stars, and the flame of a candle, and the features of my face, &c. Debility, the necessary result of the treatment, &c. in a delicate frame, was one cause of the slowness of progress. As he gained strength by an improved diet, his vision greatly improved.

He was observed to take up various objects and notice them; latterly I was in the habit of calling him into my tent when at breakfast. He noticed the cups and saucers and their patterns; chintz on the canvas; and he observed attentively a hooka, describing the bell (cut glass) as bright; noticed the snake, and mouth-piece (silver), and saw distinctly the smoke ascending.

On the 20th of December he walked several yards without assistance. A lady gave him a colored chintz cap, with which he was much pleased, and he distinguished on it the colors of green and red, and the white ground. As his new sense could scarcely be said to have been exercised more than fourteen days, further observations could not be made as to his judgment of distances, positions, forms, and motions.

No. 3.—A similar result, as far as phenomena, occurred in a boy of 12 years of age, though his acquirements were more rapid, from his natural mental intelligence being superior to the former cases: the cause of his blindness was disease after birth from the small-pox. The nature of the operation being the formation of an artificial pupil at the outer corner of the eye, it is unnecessary to repeat the details which are so similar to the preceding, and though he had seen for some weeks of his early existence, of course he had to acquire all '*de novo*.'

No. 4.—There are others who have been restored to sight who had lost it at a more advanced period of life—say five or six years of age and upwards, and when restored exhibit peculiar phenomena more or less interesting in proportion to the degree of remembrance they may possess of their former vision. And this was particularly remarkable in a young man of 25 years of age, the brother of the boy mentioned in case No. 2, who had become blind when only 5 years

old; and which is remarkably interesting in a physiological point of view, as shewing the power of the retina to preserve its susceptibility to light for twenty years, though not the only case recorded. There was certainly in this case a great approximation to the phenomena manifested in congenital blindness, but there was not that marked ignorance in recognising objects at first sight, nor that palpable want of correspondence between the touch and sight, but both existed to some extent. It was also curious that he should become blind after five years of the same disease with which his brother was born blind.

I recollect restoring a man, aged 35 years, who had been blind for a period of twelve years from the venereal disease, causing closure of the pupils. This man, after an operation for artificial pupil, recognised, of course, every thing perfectly the moment he was permitted to look about him, and still enjoys a very tolerable share of vision at *Cawnpore*.

VI.—*Memorandum of the progress of sinking a Well in the bunds of Chandpur, near the foot of the Hills. By Mr. WILLIAM DAWE, Conductor, Delhi Canal Department.*

In sinking wells through the soils, without and within the lower range of hills, I have seen repeated failures owing to the usual mode adopted in digging for the water, (i. e. with perpendicular sides;) and as I was only about 400 yards from a branch of the *Jumna*, the level of its water about 14 feet below the surface of the top of the proposed well, I calculated upon finding water at 20 feet deep at the utmost. I therefore commenced digging 42 feet diameter, contracting as I sunk, and this admitted of leaving a couple of winding steps to bring up the contents by basket loads, in preference to being drawn up with a drag-rope, (which method could not well be adopted, the top excavation being so wide.) At the depth of 24 feet I was apprehensive that the work would have been a failure, owing to the vast accumulation of heavy boulders, from 4 to 10 maunds weight, which I had no purchase to get up. This obstacle was got over by the simple method of expending one for every step of the winding roadway, always taking the precaution of letting the boulders sufficiently into the bank to prevent the possibility of their falling down on the work-people below. By this method down as deep as 37 feet the boulders were expended as we came on them, and as the soil there had a more favorable appearance for working, and there was a probability of soon getting water, and the space had become so contracted,

I was obliged to commence sinking perpendicular, which was carried on till we at length found water at 72 feet deep. The boulders found in the latter part of the work were only few, but they were of the largest size, and those were got rid off by excavating recesses in the sides and depositing them therein. The above excavation down to 72 feet was completed for 120 sicca rupees.

Part of the cylinder having been built, it was sunk in June, where I found the water had sunk 7 feet 6 inches lower. We sunk further 14 feet, when we got to a bed of clear pebbles, and bedded the well ring on small boulders, with 6 feet 6 inches water; and as the driest season has arrived, we may expect always to have a plentiful supply of good water from a total depth of 86 feet below the surface.

MEMORANDUM OF THE SOIL IN THE CHANDPUR WELL.

- Feet 1. Clayey soil.
- 2 to 7. Light soil, consisting of clay and sand, the proportion of sand increasing with the depth.
8. A vein of sand.
- 9 to 11. Sand with slight mixture of clay.
- 12 to 14. Fine sand.
15. River sand.
16. Coarse river sand.
17. Ditto ditto, with gravel and small boulders.
18. Large gravel and boulders.
- 19 to 25. Ditto ditto, some of the boulders very large.
- 26 to 27. Ditto ditto, large boulders, with a mixture of clay.
- 28 to 30. Ditto ditto, with a layer of immense boulders.
- 31 to 32. Ditto ditto, and small boulders through which a spring of water has passed, shewn by the stones being without a particle of sand mixed with them.
- 33 to 36. Large gravel with large boulders.
37. A vein of old spring, as above.
38. Gravel with small boulders.
39. A vein of river sand with a mixture of small stones.
- 40 to 41. Gravel with large boulders.
- 42 to 46. Large gravel with small boulders.
- 47 to 48. A vein of old spring—small boulders.
- 49 to 54. Gravel with large boulders.
- 55 to 56. Vein of river sand, slightly mixed with gravel.
- 57 to 64. Gravel with small boulders.
- 65 to 66. A vein of fine river sand.
- 67 to 69. Gravel with no boulders.

- 70 to 72. Vein of fine river sand—(water found here).
73 to 76. Fine sand, with a mixture of clean gravel.
77 to 79. Gravel with a mixture of yellow sand.
80 to 83. Clear fine river sand.
84 to 86. A bed of clean pebbles, and the well ring bedded on small boulders.

N. B. The water sunk while the cylinder was being built to 79-6.

Note by Lieutenant W. E. BAKER, Engineers, Assistant Superintendent of Canals.

The situation of this well is close to the southern base of the outer range of hills, where they fall away into the valley of the *Jumna*, a branch of which now occupied as the bed of the *Delhi* canal, passes within a short distance of it. The strata, of which the section is thus exhibited, are evidently the deposits of a stream, having, for the greater part of the time, at least as strong a fall and as rapid a current as the *Jumna* at the same spot now has—and they are precisely what might now be forming in the *Jumna*, were that river raising its bed—even the strata of small rounded stones, in which Mr. DAWE has attributed the removal of sand and smaller gravel to the action of formerly existing springs, have their representatives in the numerous shingle banks of the *Jumna*.

The most striking circumstance, however, illustrated by Mr. DAWE's observations, is the impermeability of these river deposits to the water of the neighboring channel, the stream of which is never dry. This circumstance was even more strongly exemplified in the same vicinity—at the village of *Rayanwalla*—where, within the inclosure of the canal chowkey, and not 60 yards distant from the water's edge, it was desired to sink a well to supply clear water to such of the establishment as remained there during the rainy season, when the river water is turbid and unwholesome. The shaft was of small diameter, as water was confidently expected at but little below the level of that in the canal: no trace of it, however, was met with to the depth of 60 feet—when, from the smallness of the shaft, it became dangerous to proceed further; the attempt was therefore abandoned and the shaft filled up again. The strata pierced through on this occasion consisted of large and small boulders, gravel and sand materials, of which we find it impossible to form a dry bund, even where the difference of level is only 2 or 3 feet—while here, the excavation must have gone at least 50 feet below the canal level.

In apparent contradiction to this, is a well known fact, connected with the rivers flowing through the northern parts of *Rohilkhand* into

the Ganges. I mean the disappearance from the surface, near where they leave the outer range of hills, and then again emerging at the distance of 10 or 12 miles lower down; thus shewing the complete permeability of the gravel beds through which they must be supposed to trickle—and that this is in some measure the case in the *Jumna* also, is rendered probable by a circumstance which came under our observation in the great drought of 1833-34.

In order to supply the excessive demand for water for irrigation, it became necessary to throw a gravel bund right across the *Jumna*—just below the head of the canal; and at this very period, as appears from a record kept in the Executive Engineer's Office at *Agra*, a slight diminution only of the waters of the *Jumna* at that place was observable.

VII.—*The History of Labong from the Native Records consulted by Dr. D. RICHARDSON, forming an Appendix to his journals published in the preceding volume*.*

The annals of *Labong* reach back to the same remote and fabulous period as those of the neighboring nations. In the year 1118, (A. D. 574,) after GAUDAMAH had obtained *nib-ban*, or eternal rest, two holy men, WATHOO-DAY-WA† and TUKA-DANDA, (having first buried a shell with the spiral turned the reverse way,) by prayers and holiness raised from out the earth the walls, gates, and ramparts, and sunk the fosse of *Labong*. They marked the site of the pagoda, and during two years employed themselves in calling together the people from the surrounding forests and small villages. In 1120 they raised to the throne RAMA or ZAMMA-DAY-WE, daughter of the king of *Chandapur* (or, *Wintian*, the capital of *Saroarata-ty-ne*), and widow of a prince of *Cambodia*. She had twin sons, MAHANTA-YATHA. The elder succeeded her in *Labong*, received the common title of “SEN-BUR SHEEN,” or Lord of the White Elephant, for having caught one of that color. AINDAWARAJA, the younger, built and reigned in *Lagon*. In *Labong* (the Magadharrame of which is HARI-BOUNG ZAYATYNE) from RAMA-DAY-WE to ADUTZA-WOON-THA, who built the pagoda (*assein dayá*) there reigned 35 kings, and from ADUTZA-WOON-THA to BENYA-THEOHA 19; in all 54 kings reigned in *Labong*. BENYA-MEN-YEA, called in *Ava* History DOLANA BENYA-TSO-MEN-YEA, the son of BENYA-THOOHA, succeeded him, and reigned ten years in *Labong*,

* We have already quoted from this document in manuscript; see Appendix General Tables, page 135.—ED.

† *Vasu-deva*?—ED.

three in *Kim-yea*, five in *Wen-congkan*. In 651* he crossed the Thaluen river, and married a daughter of THOOTHATHOMA, king of Pegu, with whom he received in dower four hundred Taliens or Peguers and their wives, the town *Yain Salen* and its dependencies, and returned to his country; and on Thursday the full moon of Kasong, (May,) 656, at midnight, founded *Zama-pada-pur-there-nagara-nawara-raza-tani*, or *Zimmay*, measuring from east to west five hundred tals†, from north to south four hundred and fifty tals; built his palace of *Zayaboungme*; reigned thirty-seven years; in 623 died, aged eighty, and was succeeded by his son NGATHEN-POOTCHOO, who in 695 was succeeded by his son TSO-TCHOMTA-YUNG; and he in the same year by his son NA-TCHOON-TARCUNG; and he in

698 by his son NGA-THENPOO; and he was succeeded in

707 by his son TSO-KANPEW; he in

709 by his son TSO-ROA-YOU; and he in

731 by his son GOONA; and he in

739 by his son-in-law GNATHENMIMA; and he in

742 by his son THAMBI; and in

782 his son TSO-BENYA succeeded; and in

817 his son TSO-NEAT succeeded; and in

825 his son BENYA TSOOTHER, called also *There-tha-da-matilanka-seek-ka-wa-te-ya-za*; in

865 his son TSO-MYNEAE succeeded; and in

899 his son BENYA TSAY; in

904 his son TSO-MYNE; in

906 his daughter ZALA-PABA, called also *There-thadama-maha-day-we*.

920 SEN-BUE-MYA-SHEEN, king of Pegue, took the town, but allowed the queen to enjoy the revenues with the royal title till her death, when he gave the town and revenue to his son NARATA-TSO, the *myo-tsa*, (literally, town-eater: the person who enjoys the revenue of a town amongst the Burmese is so called). SARAWADI, in the

* To account for the discrepancy in the dates of *Labong* and *Zimmay*, it is to be stated that the common era has been twice altered; once 624 years after the death of GAUDAMAH, by THERE MOUNGDARI, king of *There*; KIT-TARA, who dropped 622 years, and commenced from 2. The second alteration was made by THENGARET, king of *Pagan*, in the seventeenth year of his reign, 562 years from the reign of THERE MOUNGDARI, who dropped 560 years, and again commenced with 2. *Labong* was founded 1118 years after the death of GAUDAMAH; and *Zimmay* 656 years after the alteration of THENGARET, or 1838 years of the death of GAUDAMAH; giving a period of 720 years to 54 kings, and average of thirteen years and some odd months and days to each reign. (See Chron. Appendix, page 84.—ED.)

† The tals, is seven cubits.

year 990, after the death of SEN-BUE-MYA SHEEN, the chief of *Moung-nam*, rebelled in *Zimmay* and shook off the Peguan authority; and in 992, THA-DAN-DAMA-YAZA, the grandson of SEN-BUE-MYA-SHEEN retook it. 1125, *Tso-oung* recovered its independence, which it enjoyed only a short time, when it was taken by SEN-BUE-SHEEN, king of *Ava*, son of the great ALOMPRA. 1136, BENYA-SA-BAN, and KAWHEELA, the eldest brother of the present *Chow-tchee-weet* of *Labong*, who was *Myo-tsa* of *Lagon*, rose against THA-DAN-MENDEU, called by the Shans *Bogoung-bue*, (a white-headed chief.) The Governor of *Zimmay* under SEN-BUE-SHEEN again prevailed and transferred their allegiance to *Bankok*, to which they have continued subject ever since. KAWHEELA had six brothers, three others of whom have received from the king of *Bankok* the title of "Chow-tcha-Weet," or "Lord of Life," one of the many titles he himself enjoys, and the other three have been Chows Moungs of the other towns. The present Chow-tcha-Weet, who is now seventy-two years of age, is the youngest and last of the seven brothers. He has five children by his first chief wife, viz. the wife of CHOW HOUA of *Labong*; the wife of a chief who is at *Bankok*; CHOW RAJA BOOT, the eldest son; another daughter who is deranged, but quiet and inoffensive. CHOW HOUA of *Labong* will probably succeed to the *zazabolenoe*. He is certainly, from his intelligence and habits of application to business, incomparably best fitted to do so. But it is the opinion of the northern Tsoboas that the CHOW HOUA of *Zimmay*, who is even now little inclined to submit to the old Tsoboa's authority, will not quietly acquiesce, and that at the death of the present Tsoboa there will be some bloodshed in the country.

VIII.—*Suggestions on the Sites of Sangala and the Altars of Alexander; being an extract from Notes of a Journey from Lahore to Karichee, made in 1830. By C. MASSON.*

"At length after a long march we arrived at *Hurreepah*, having passed the whole road through close jungle. East of it was an abundance of luxuriant grass, where, with many others, I went to allow my nag to graze. On rejoining the party, I found it encamped in front of the village and an old ruinous castle attached to it. Behind us was a large circular mound or eminence, and to the west was an irregular rocky height crowned with remains of buildings, shewing fragments of walls, with niches in them. This elevation was undoubtedly a natural object; the former, being of simple earth, was probably artificial. On going to examine the remains we found two immense

circular stones with large perforations, which we were told were once worn round the ancles by a celebrated fakeer, who resided here, and who among other proofs of mortification and sanctity, accustomed himself to eat earth and other strange substances. Between our encampment and this natural height was a small space of jungle, in which are a few *pípal trees* in the last stage of existence. The old fort, an erection of other days, is built with burnt bricks; its walls and towers are very high, and its extent considerable, but time has made evident ravages in its defences: its bulwarks have in many places tumbled down, and it is no longer occupied. Surrounding the north-east angle of the fort, is a small swamp. We were cautioned by the inhabitants, that we should be much annoyed by a species of gnat, called *muckah*, which swarm by night in these jungles during the rainy months, but which we had not hitherto seen. To avoid these, we decamped towards evening, and fixed ourselves on the summit of the circular artificial mound before mentioned.

It was impossible to look upon the prospect of the fort and swamp before us, and beneath our feet, upon the ground on which we stood, without feeling the conviction that we were beholding the fort and lake of *Sangala*, and that we stood on the eminence protected by the triple lines of chariots, and defended by the *Kathæi*, before they allowed themselves to be shut up in their fortress.

The evidence of ARRIAN is very minute as to this place, and he furnishes excellent data which cannot be mistaken in their application. While ALEXANDER was proceeding to occupy the kingdom, abandoned by its monarch the second PORUS, he received intelligence that the *Kathæi*, the most warlike of the Indian nations in those parts, in confederacy with others, probably the *Malli* and *Oxydracæ*, had collected their forces, and resolved to oppose his progress, if toward them directed. As the occupation of an undefended country presented no field for achievement or glory, he dispatched HEPHESTION to effect its settlement, and marched direct against the *Kathæi*. At the period of receiving tidings of the hostile attitude of these Indians, ALEXANDER had crossed the *Acesines*, and was marching towards *Lahore*, if we credit the inference that this city represents the capital of the fugitive PORUS. He diverged to the south, and having crossed the *Hydraotes* or *Raví*, on the first day arrived at *Pimprama* (possibly *Pind Brahma*, Brahma's or the Brahman's village) at which he halted the second, and on the third reached *Sangala*, which ARRIAN describes as a city with a fort built of brick, at one extremity of which was a lake, not containing much water. He farther informs us that ALEXANDER found the *Kathæi* drawn up on the summit of an eminence

opposite their fort, which was not very high or difficult of access; this they had fortified with a triple row of chariots and waggons, placing their tents in the middle. ALEXANDER successively stormed the barriers of wheeled carriages, and the Kathæi sought refuge within the walls of their fortress. Around this he then drew an intrenchment, except at the point where the lake intervened, the bank of which he secured by lines of waggons he had captured, and there stationed a strong division of troops under PROLEMY to intercept the flight of the garrison, which he naturally concluded, when driven to extremity, would attempt to escape that way—the depth of water, in what ARRIAN calls a lake (or it may be his translator) being, as he himself assures us, inconsiderable. ALEXANDER having completed his line of circumvallation and other precautionary measures, advanced his engines to the assault of the walls. The terrified garrison, as anticipated, by night attempted to pass the lake; their progress was intercepted, and they were driven back, with immense slaughter. The operations of the siege continuing, the towers of the fort were overthrown by mines, and it was finally carried by assault.

In the present *Hurreepah* we are able to recognize every feature which ARRIAN so distinctly points out—the fort built of brick, the lake, or rather swamp of water, and the eminence or mound opposite the fort—this last is wonderfully convenient for the mode of defence the Kathæi adopted, from the gentle slope of its sides. Moreover, a trench still exists between the mound and the fort and parallel thereto, which may plausibly enough be ascribed to the line of circumvallation raised by the Macedonian engineers.

With respect to the present fort, however ancient it may be, it is not of course the identical one that was besieged by ALEXANDER, and which ARRIAN informs us was razed to the ground—but in all probability it occupies the precise site, and may be built with the materials of the one sacrificed to Grecian resentment.

It is necessary to state with regard to *Hurreepah*, that native tradition assigns to the spot the commencement of a large city, which extended as far as *Chichee Wutnee*, twelve coss southward—the period of its existence so remote, that it is not known whether the Hindu or Muhammedan religion was then professed—and that it was destroyed by an immediate visitation of Divine anger, excited by the crimes of the sovereign, who appropriated to himself the wives of his subjects. The eminence, so often noted, is covered with fragments of bricks and earthen-ware, as is the entire neighborhood of the place. Accident prevented me from observing if any remains of buildings were discernible in the next march we made to *Chichee*

Wutnee, as we travelled by night—but I conclude not, as nearly the whole road led through marshes.

The identification of *ARRIAN's Sangala* would not be merely curious as a point of illustrative geography, but of importance as directing us to the spot where *ALEXANDER's* operations ceased on the banks of the *Hyphasis*, and affording a better clue than we were hitherto acquainted with for the detection of the site of the famous altars erected by the illustrious Greek as lasting monuments of his progress and victories. Various have been the inferences drawn as to the position of these celebrated structures—but I hesitate not to suggest that they were erected on the banks of the modern *Gharra*, composed of the united streams of the *Beyah* and *Sutlej*, and at that point or nearly where a direct line drawn from *Hurreepah* would meet the river,—that is, (if there be faith in modern maps,) in that portion of it which divides the Sikh and Bhawelpur territories. *ARRIAN* describes *Sangala* as two marches from the *Hyphasis*, and *Hurreepah* is distant from the *Gharra* eighteen or twenty coss (27 or 30 miles). It is impossible not to admire the correctness of *ARRIAN* in his relation of *ALEXANDER's* progress in the *Panjáb*, and I feel confident, that had I been fortunate to have had him for a companion when a wanderer in that country, the vestiges of his altars, if any remain, might have been detected. *PLINY* and, I believe, *STRABO*, have placed them on the eastern bank of the *Hyphasis*: this, if correct, will not affect general circumstances of locality.

The ancient name *Sangala* appears a composition of *sang* and *killah**, or literally, the stone fort, and figuratively applied to any strong fort, owing to position, construction or otherwise, without reference to the materials of which it may be built. The modern name denotes in *Hindí*, the green town, and would seem to refer to the luxuriant pastures to be found east of it.

The learned *WILFORD* has accused *ARRIAN* of confounding *Sangala* with *Salgeda*, which he says still exists near *Calanore*, and agreeing minutely with the historian's description. *Sangala* he describes as situate in a forest, and sixty miles west by north of *Lahore*. *Hurreepah* is also situate in a forest, or intense jungle of small trees and bushes, but is south-west of *Lahore*, and at a somewhat greater distance than sixty miles. The fortress of *Sangala*, so particularly described by *ARRIAN*, must clearly by deduction have been south of *Lahore*, and, as it was only two marches from the *Hyphasis*, could never have been the *Sangala* of *WILFORD* to the north-west of *Lahore*.

* This derivation from Persian and Arabic is, we fear, hardly admissible.—ED.

This site deserves farther attention, as we find that *Sangala* was, subsequent to its destruction by ALEXANDER, re-edified under the name of *Euthydemia*, in honor of the father of the reviver—but who this reviver of *Sangala* may have been, whether DEMETRIUS, MENANDER, or APPOLLODOTUS, has not been determined by the few who have bestowed attention on this obscure but highly interesting portion of ancient history.

IX.—*Chinese Account of India. Translated from the Wān-hēen-t'hung-kuou, or "Deep Researches into Ancient Monuments;" by Ma-twan-lin; book 338, fol. 14.*

[The great interest which now prevails respecting the middle age of Indian history, persuades us to transfer to our pages the following article from the London Asiatic Journal for July, August, 1836. The author or translator's name is not given.—ED.]

Tēen-choo (or India) was known in the time of the latter Hans; the country was then called the kingdom of *Shin-too**.

Note of the Chinese Editor.

[Chang-kēen, when first sent (B. C. 126) into Ta-hea (or Bactriana), saw stems of bamboos, as in the Shoo country (modern province of Szechuen). He inquired how they obtained these bamboos; some men of Ta-hea replied: "Our merchants procure them in the markets of the kingdom of Shin-too, which is Tēen-choo. Some call this kingdom Mokea-to†; others name it Po-lo-mun (country of the brahmins); it is situated to the south of the Tsung-ling‡ (or Blue Mountains), distant some thousands of *le* to the south-east of the Yuē-che§ (Massagetæ, or Indo-Scythians).

This country is about 30,000 square *le* || in extent; it is divided internally into five Indias; the first is termed Middle or Central India; the second Eastern India; the third Southern India; the fourth Western India; and the fifth Northern India. Each of these divisions of the territory contains several thousands of *le*; and fortified cities, surrounded with walls, and towns of the second order, are placed a few hundred *le* apart.

Southern India is bounded by the Great Sea (the Gulf of Bengal); Northern India is situated opposite to the Snowy Mountains¶; on the

* In Sanscrit सिन्धु, *Sindhú*, Hindustan.

† मगध *Magadha*.

‡ A chain of mountains to the north of Cashmere, which separates Eastern Turkestan, or Little Bucharia, from Great Bucharia.

§ M. REMUSAT has given a translation of Ma-twan-lin's account of the Yuē-che in his *Nouv. Mélanges Asiat.* t. i. p. 220.

|| According to Dr. KELLY (*Orient. Metrol.*, p. 64), 200 *le* are equal to one degree of the meridian = 69°166 English miles; whence 30,000 *le* will give about 10,375 English miles.

¶ *Suei-shan*, an exact translation of the Sanscrit हिमालय *Himálaya*, 'abode of snow,' or rather हिमालयगिरि *Himálaygiri*, 'mountain whereon the snow rests.'

This division of India must include the modern Cashmere, the description of which, by MAS'UDI, the Arabian historian, coincides in a striking manner with that of the Chinese author: "The kingdom of Cashmere," he says, "which forms part of India, is surrounded with very high mountains; it contains a prodigious number of towns and villages; it can be entered only by a single pass, which is closed by a gate."

four sides, there are mountains sloping to the south, and a valley which crosses them forms the gate (or entrance) of the kingdom. Eastern India is bounded on the east by the Great Sea, as well as by Foonan (Pegu) and Lin-e (Siam), which are separated only by a little sea. Western India adjoins Ke-pin (Cophenes) and Po-sze (Persia)*; Central India is situated in the middle of the four other divisions of India.

All these kingdoms had kings in the time of the Han dynasty. There is besides the kingdom of Yuen-too, which is distant from Chang-gan† 9,800 *le*; it is 2,800 *le* from the residence of the Governor-general of the Chinese provinces in Central Asia‡. To the south it adjoins the Blue Mountains; to the north its frontiers are contiguous to those of the Woo-sun.

Yän-sze-koo has stated that Yuen-too is no other than Shin-too; and Shin-too is Tëen-choo; there is no difference but in the pronunciation more or less strong.]

From the kingdom called Kaou-foo§ of the Yüë-che, going to the west and south, as far as the Western Sea (the Indian Ocean); to the east, as far as Pan-ke; all these countries form the territory of Shin-too. It has a number of fortified towns; in about a hundred, commandants reside. There are also different kingdoms; ten of them have kings. There is, however, little difference between them, and the whole have the collective denomination of Shin-too.

Note of the Chinese Editor.

[The narrative of Foo-nan states: "The kingdom of She-wei (Kapila) belongs to that of Kea-she|| in India, which some call the kingdom of Pho-lo-nae, and others the kingdom of Sze (or) She-pho-lo-na-sze."

Choo-fa-wei, in his *Füh-kwō-ke* (Memoir on the kingdoms of Füh, or Buddha), states that the kingdom of Pho-lo-nae (or Benares) is situated 1,480 *le* south of the kingdom of Kea-wei-lo-wei (or Kapila). In the account of the kingdom of Ching-le by She-fä, it is said: "Few oxen are killed in this kingdom; the sheep of the country are black; their horns, which are slender and apart, may be four feet long; one is killed about every ten days, but if any of these sheep happen to die of disease, the inhabitants use the blood of bullocks. These animals live a long time;

* See for an account of these countries by Ma-twan-lin, the translation by M. RE'MUSAT, *Nouv. Mém. Asiat.* t. i. pp. 205 and 248.

† Capital of the Hans, situated in Shen-se; now Se-gan-foo.

‡ This position of the kingdom of Yuen-too affords reason to think that it may be the same as that of Shin-too. It is only in the transcription of the Sanscrit word *Sindhū*, the name of the Indus and of the countries bathed by that river, that there is a slight difference. The proximity of the Woo-sun, however, suggests that Yuen-too must comprehend the country in which modern Badakshan is situated.

§ The following account of this kingdom is given by Ma-twan-lin elsewhere (b. 339, f. 27): "The kingdom of Kaou-foo was known in the time of the Hans. It is situated to the south-east of the great Yüë-che (Massagetæ). It is likewise a considerable state. Their manners resemble those of the inhabitants of India, and they are gentle and humane. They carry on much commerce. India, Cophenes, and the country of the Asæ, are three kingdoms which are *conquered by force and lost by weakness*." The latter expressions are borrowed from the *Taou-tih-king* of Laou-tsze.

|| काशी *Kāśī* or *Kashī* 'splendid,' epithet of the sacred city of Benares, called वरणासी *Varanasi* or वरणासी *Varanasi*. The latter denomination is represented as closely as is permitted by the monosyllabic language of the Chinese (which wants the articulation *ra*) by *Pho-lo-nae*: the Sanscrit व *v* having so often the sound of ब *b*, that they are not distinguished from each other in Bengālī writing: *Sze* (or) *She-pho-lo-na-sze* is also a faithful transcript of श्रीवर्णासी *Śrī Varanasi*, 'the holy, the fortunate Benares.'

the people of this country likewise are very long-lived. Their kings commonly reign a hundred years, and the bullocks live as long as the men. This kingdom is a dependency of India."]

The royal residence overlooks the river Hǎng or Gǎng (Ganges)* which some call Kea-pih-le. Here is situated the mountain Ling-tseau; called in the language of the Hoo-yu country, Ke-too-keu: it is a green rock, the head (or summit) of which resembles that of the bird tseuou.

Note of the Chinese Editor.

[Choo-fā-wei says, in his *Füh-kwō-ke*, that this mountain is situated to the south of Mo-kēē-te†, which is also a kingdom dependent on India.]

At the period‡ when all these kingdoms belonged to the Yuē-che, the latter put their kings to death and substituted military chiefs. They enjoined all their people to practise the doctrine of Füh-too (Buddha); not to kill living creatures; to abstain from wine; and to conform entirely to the manners and customs of the inhabitants of the country, which is low and damp, and the temperature very hot. This kingdom is traversed by large rivers; the people fight upon elephants; they are of a feeble constitution compared with the Yuē-che.

The emperor Woo-te, of the Hans (B. C. 142 to 87), sent an expedition of about ten persons, by the west and south, in search of Shin-too. All information having been refused to the persons composing this expedition, they could not reach the country§. Under Ho-te (A. D. 89 to 106), several ambassadors from that country came to offer tribute||. The western

* In Sanscrit गङ्गा *Gangā*; this river, in sacred writings, bears also the name of कपिल *Kapila*, and more commonly कपिलधारा *Kapiladhāra*.

† समध *Magadha*, the southern portion of the modern Bahar.

‡ This important epoch in the history of India may be fixed with precision by means of Chinese historians; and it is not one of the least advantages derivable from the study of the writers of this nation. Ma-twan-lin, in his account of the Great Yuē-che, or Indo-Scythians (book 338, fol. 2), states that the Chinese general Chang-kēen was sent as an ambassador to the Yuē-che, by the emperor Woo-te (B. C. 126), and that, about 100 years after, a prince of this nation, who possessed one of the five governments of the country of the Dahæ, subjected the Getes in Co-phenes, and that Tēen-choo, or India, was again subjugated by the Yuē-che. This other conquest of India by the Scythians must be placed, therefore, about the year B. C. 26. Ma-twan-lin adds, that these Yuē-che, having become rich and powerful (by these conquests), remained in this state till the time of the latter Hans, who began to reign A. D. 222. It results from hence that the Scythians (or Yuē-che) must have been masters of Western India from about B. C. 26 till A. D. 222, that is, for a space of 248 years. The first invasion of India by the Yuē-che, or Scythians, must have taken place before the reign of Vicramāditya, whose celebrated era, which begins fifty-six years before ours, originated from the complete defeat of the Scythian armies by this Indian prince; an event which deserved to be thus immortalized. See *Indian Algebra*, by Mr. COLEBROOKE, (Preface, p. 43,) and Lassen, *De Pentapotamid Indicā Commentatio*, p. 56. The first of these learned Indianists, from whom we are sure of deriving information, whenever we are engaged in the investigation of a great philological, scientific, and philosophical question respecting India, cites an ancient scholiast on Varāha Mihira, who thus explains the word "saka" employed by this astronomer to denote the Samvat era: "epoch when the barbarian kings named *Saka* (the Sacæ) were defeated by VICRAMĀDITYA."

§ This same emperor gained some trifling particulars respecting Shin-too, or India, by his general Chang-kēen, whom he had sent to the Yuē-che, which are preserved by the historian Sze-ma-tsēn, in his *Sze-ke* (book 123, fols. 6 and 7), where it is stated that Shin-too is situated to the east of Fa-hea, the capital of which was the city of Lan-she.

|| At this period, China was still considered as the paramount state of all the half-civilized nations inhabiting Central Asia. It is not, therefore, surprising, that the chiefs of India subject to the Yuē-che, or Scythians, should have thought of sending ambassadors to China, in search of means of delivering their country from

countries (subjected to the Chinese) then revolted, and separated from the empire.

In the second of the years *Yun-he* of *Hwan-te* (A. D. 159) strangers often came by the way of *Jih-nan* ('south of the sun'; *Touquin* and *Cochin-China*), to offer presents.

A tradition of this time relates that the emperor *Ming-te* (A. D. 58 to 76), having dreamed that he saw a man of gold, very large, whose head and neck shone with prodigious brightness, interrogated his ministers on the subject. One of them told him that, in the western region (*se-fang*), was a spirit (*shin*), whose name was *Füh*; that his statue was six feet high, and his color that of gold. The emperor, upon this, despatched ambassadors to India to learn the laws and doctrine of *Füh*, and to bring to China his portrait painted, as well as some of his statues. The king of *Tsoo* (a petty feudatory kingdom of China), named *Ying*, was the first who believed in this false doctrine (of *Füh*); hence it was that other persons in the Middle Empire adopted it.

Thereupon, *Hwan-te* (A. D. 147 to 167) imbibed a great partiality for the *shin* (spirits or genii); he sacrificed repeatedly to *Füh-too* and to *Laou-tsze*. The people of China gradually adopted (this new religion): its followers augmented greatly.

In the time of the *How* and *Tsin* dynasties (A. D. 222 to 280), no new relation took place between India and China; it was not till the period of the *Woo* dynasty, that the king of *Foo-nan*, named *Fan-chän*, sent one of his relations, named *Soo-wih*, as ambassador to India. On quitting *Foo-nan*, the embassy returned by the mouth of the *Taou-keou-le**, continuing its route by sea in the great bay (or gulf of *Martaban*), in a north-westerly direction; it then entered the bay (of *Bengal*), which they crossed, and coasted the frontiers of several kingdoms. In about a year it was able to reach the mouth of the river of India, and ascended the river 7,000 *le*, when it arrived at its destination. The king of India, astonished at the sight of the strangers, exclaimed: "the sea-coast is very far off; how could these men get here?" He commanded that the ambassador should be shown the interior of the kingdom, and with this view he appointed as guides to attend him, two strangers of the same race as the Chinese†, and he supplied *Soo-wih* (the ambassador) with provisions for his journey, and presents for *Fan-chän*, king of *Foo-nan*, consisting of Scythian horses, and four pieces of valuable woollen stuffs‡.

During this time, the *Woo* dynasty§ despatched an officer of the second rank, named *Kang-tae*, as ambassador to *Foo-nan*, where he saw foreign guides of the same nation as the Chinese. To all the questions he put to them, concerning the manners and customs of the people of India, they answered him as follows: "The doctrine of *Füh* is that which is in vogue in this kingdom. The population is very numerous; the soil rich and

barbarians, by the aid of the Chinese armies, which could oblige their revolted subjects to return to their duty. Thus we may easily explain facts apparently so improbable.

* The *Irrawaddy*, in the *Burman* empire.

† Literally: "in consequence, as attendants or guides (he had given to him) two men, foreigners, of the same species as the *Sung*." By *Sung-jin*, 'men of *Sung*,' *Ma-twan-lin* designates the Chinese, who were so called in his time; he wrote under the *Sung* dynasty, in the latter part of the thirteenth century. The sense

which 陳 *chin* has received is that which it bears in the phraseology of the *Le-ke*, cited by the dictionary of *Kang-he*, in explaining this character.

‡ 四疋 *Sze-pei*.

§ One of the three dynasties which reigned simultaneously over three divisions of the Chinese empire: it subsisted from A. D. 222 to 280.

fertile. The king who rules here has the title of Maou-lun*; the suburbs of the fortified city in which he resided are watered by rivulets, which flow on all sides, and fill the deep ditches surrounding the city. Below it flows the great river (the Ganges). All the palaces are covered with sculptured inscriptions, and other ornaments in relief. A winding street forms a market, a *le* in length. The dwelling-houses have several stories†. Bells and drums are their instruments of music, and the dress of the people is adorned with fragrant flowers. They travel by land and by water; their commercial transactions are considerable, in jewels and other valuable articles of luxury, and every thing which the heart can desire is procurable here. On every side, to the right and to the left, you behold only agreeable and seductive objects; the houses are overshadowed by foliage, and cooled by the motion of waters of all kinds. There are sixteen great kingdoms which are remote from India; some distant 2,000 *le*; others 3,000. All these kingdoms honor and respect India, which they regard as placed between heaven and earth."

The fifth of the years *yen-kea* of Wán-te, of the Sung (A. D. 428), the king of the kingdom of Kea-pih-le (Kapila) in India, named Yuě-gae ('beloved of the moon'‡), sent an ambassador to him to present him with letters of submission (*penou*), and to offer diamonds, valuable rings, bracelets, as well as other ornaments of worked gold, and two parrots, one red and the other white.

The second of the years *tue-she* of Ming-te (A. D. 466), an ambassador came to offer tribute. This ambassador had the rank of lieutenant-general of the army.

Note of the Chinese Editor.

[The eighteenth of the years *yen-ken* (A. D. 441), the king of the kingdom of Soo-mo-le sent an ambassador to offer the products of his country. The second of the years *heou-kéen*, of the emperor Heaou-woo (A. D. 455), the king of the kingdom of Kin-to-le§ sent a superior officer to offer gold coin and precious vases. On the first of the years *yen-wei*, of Fei-te (A. D. 473), the kingdom of Pho-le(?) sent an ambassador to offer tribute. All these kingdoms practised the doctrine of Füh.]

In the beginning of the years *téen-kéen* of the dynasty Leang (A. D. 502), the king of India, named Keu-to, sent his great officer, named Choo-lo-ta, to present letters of submission, and to offer vases of crystal, perfumes of all sorts, precious talismans, and other articles of this kind.

This kingdom (India) is traversed by great rivers||. The spring or

* This title must be the Chinese transcription of महारण *Mahārana*; there can be no doubt in respect to the first syllable, *maha* (in composition) 'great;' but the Sanscrit word represented by *lun* (or *run*, *ran*) is less certain. At all events, this must be a king of India whose reign corresponded with this date, between A. D. 222 and 280.

† This is the case at Benares, where many of the houses have seven or eight stories; and the numerous temples and public edifices are covered with sculptures and bas-reliefs.

‡ In Sanscrit, *Chandrakānta*, 'well beloved of the moon,' a name also given to a precious stone; or rather it would be *Chandrananda*, 'joy or delight of the moon,' cited in the fifth table of the *Ayeeen Akberi*, in the history of Cashmere. [Dr. MILL suggests that this monarch is Chandrasri. See p. 100 of Genealogical Appendix. —ED.]

§ The *Gandari* of Herodotus and Strabo? In Sanscrit गन्धरि *Gandhari*, or गन्धर *Gandhara*.

|| "*Kuo lin ta keang*," literally, 'the kingdom overlooks great rivers.'

source, Sin-taou*, issues from mount Kwán-lun†; its waters then divide into five streams, and form what are termed the affluents of the Ganges (*ming Gāng shwuy*). Their waters are sweet and beautiful, and at the bottom of their bed they deposit a real salt, the color of which is as white as that of the essence of the water (*shwuy tsing*).

In the time of Senen-woo, of the dynasty of the latter Wei (A. D. 500 to 516), South India sent an ambassador to offer as presents some horses of a fine breed. This ambassador stated that the kingdom produced lions, leopards, panthers, camels, rhinoceroses, and elephants; that there was a species of pearl there, called *ho-tse*, similar to talc (*gun-moo*), the color of which was yellowish red (*tse*, 'reddish blue'); if it is divided, it disperses like the wings of the cricket; if it is heaped up, on the other hand, it becomes compact, like threads of silk strongly woven. There were diamonds resembling amethysts (*tse-shih-ying*). When purified a hundred times in the fire, without melting, this diamond is used to cut jasper (*yu* stone). There were also tortoise-shell (*tae-mei*), gold (*kin*), copper (*tung*), iron (*lě*), lead (*yuén*), tin (*seih*), fine muslins embroidered with gold and silver‡; there are also a variety of odoriferous plants, *yūh-kin*, sugar-canes, and all kinds of products; honey-bread (or solid honey§), pepper, ginger, and black salt.

On the west, India carries on a considerable commerce by sea with Taksin (the Roman empire), the An-se (or Asæ, Syrians); some of the Indians come as far as Foo-nan and Keaou-che (Tonquin), to traffic in coral necklaces and pearls of inferior quality (or which only resemble pearls—*san-kan*). These merchants are accustomed to dispense with books of accounts (in their commercial transactions). Teeth (elephants' or rhinoceros'?) and shells form their articles of exchange. They have men very skilful in magical arts||. The greatest mark of respect which a wife can show towards her husband is to kiss his feet and embrace his knees: this is the most energetic and persuasive demonstration of the interior sentiments. In their houses, they have young girls who dance and sing with much skill¶. Their king and his ministers (*ta-chin*, ministers about the sovereign) have a vast number of silk dresses and fine woollen fabrics.

* These curious details, the exactitude of which may excite surprise, prove that the Chinese historians were better informed than might be expected of facts and circumstances concerning Central and Western Asia. We are indebted to Mr. COLEBROOKE for the means of ascertaining the accuracy of the Chinese writer. In fact, the Chinese words *Sin-taou* are but the transcription of the Sanscrit word सीता *Sitá*, the name of one of the sources of the Ganges. In a memoir upon the sources of this river, this illustrious and profound Indian scholar cites the following passage from the astronomer BHĀṢKARA ACHĀRYA: "The holy stream which escapes from the foot of VISHNU, descends from the abode of VISHNU on Mount Meru (the Kwan-lun), whence it divides into four currents, and passing through the air, it reaches the lakes on the summit of the mountains which sustain them. Under the name of *Sitá*, this river joins the Bhadráswa; as the *Alakanandá*, it enters Bharata-varsha (Hindustan); as the *Chackshu*, it proceeds to Ketumala, and as the *Bhadra*, it goes to the Kuru of the north."—*Siddhānta-Sirōmani*; *Bharata-Kosha*, 37 and 38.

† Mount Meru. "The Hindus say that the Ganges falls from heaven upon its summit, and thence descends in four currents; the southern branch is the Ganges of India; the northern branch, which flows into Turkey, is the Bhadrásámá; the eastern branch is the *Sitá*, and the western is the Chakshu, or Oxus."—WILSON, Sanscrit Dict., 2nd edit., Art. *Meru*. The name *Meru* is the *Mepos* of the Greeks.

‡ These are, no doubt, the fine brocades, embroidered with gold and silver, for which Benares is still so celebrated, which continue to constitute an extensive article of commerce throughout India, and which European industry, however successful its efforts to imitate the products of the East, has not yet been able to rival.

§ *Shih-mei*h, 'stone-honey.'

|| 尤工幻化

¶ These are, no doubt, the nautch-girls.

He dresses his hair on the top of his head* (like the Chinese women), and the rest of the hair he cuts, to make it short. Married men also cut their hair, and pierce their ears, to hang valuable rings in them. The general practice is to walk on foot. The color of their dress is mostly white. The Indians are timid in battle; their weapons are the bow and arrows, and shield; they have also (like the Chinese) flying or winged ladders†; and, according as the ground will permit, they follow the rules of the *wooden oxen* and *rolling horses*‡. They have a written character and a literature, and they are well versed in astronomy or the science of the heavens, in that of numbers, and in astrology. All the men study the instructive books denominated *Seihthan*, written on the leaves of the tree *pei-to*, intended to preserve a record of things§.

Yang-te, of the Suy dynasty (A. D. 605 to 616), wishing to know the western countries (Se-yu), sent Pei-too to endeavour to determine the boundaries of the kingdoms of Se-fan (ancient Tibet). This envoy traversed many countries, but did not penetrate to India, believing that the emperor had some animosity against the king of this country, whose family was of the race of Ke-le-he, or Cha-le||: at this period there were no troubles, no revolts in his kingdom.

The grain sowed in the marshy soils ripens four times a year¶. The barley, which grows the highest, exceeds the height of a camel. The women wear ornaments of gold and silver on their head, and necklaces of pearls. The dead are burnt, and the ashes of their bodies are collected and deposited in a place set apart; or they throw them into a waste spot, and sometimes cast them into a river: in this manner, funeral ceremonies with cakes of flesh of birds, wild animals, fish and tortoises, are dispensed with.

Those who excite revolts and foment rebellions are punished with death; slight crimes are expiated by money. A person who has no filial duty (or fails in duty towards his parents), suffers mutilation of hands, feet, nose, ears, and is exiled beyond the frontiers. There is a written character and a literature (in this country); the study of astronomical sciences has made great progress there; there are astronomical books in

* To form the जत [jatā. See the laws of MENU, book ii. v. 219, &c.

† Fe-te; this is a scaling-ladder, of which a representation may be seen in the *Art Militaire Chinoise*, figs. 48 and 49.

‡ Mūh-meaou, and lew-ma. These are machines of war, of which we know not the form.

§ The following is the Chinese text of this important passage:—

有文字善天文等曆之術其人皆
學悉曇章書於貝多樹葉上記事

The two Chinese characters (2nd and 3rd of 2nd line) *seth-than* are a transcription of the Sanscrit word सिद्धान्त *Siddhānta*, which signifies 'established truth,' 'demonstrable conclusion,' and which forms the titles of many scientific books, as the *Sūrya-Siddhānta*, a celebrated treatise on astronomy; the *Brahma Siddhānta*; the *Siddhānta Kaumudi*, &c. The leaves of trees, *pei-to*, (7, 8, of line 2) are the *olas*, on which most of the Sanscrit MSS. are written, especially those in Telinga characters which come from Southern India. *Pei-to* may be the transcription of पीत *pīta*, 'yellow,' or पीतक *pīta-ka*, the Sanscrit name of the aloe, the leaves of which are well adapted to the purpose indicated by the Chinese author, especially for writing traced with a style.

|| That is, the royal and military caste of Kshatriyas; क्षत्रियजाति *Kshatriya jāti*.

¶ *Taou*, 'grain that is planted amongst water; the paddy of the southern regions.'—*Morrison's Dict.*

the *Fan* (or Sanscrit) language ; leaves of the *pei-to* are used to preserve a record of things*.

There is a spot in this kingdom, where are said to be, and where are pointed out, ancient vestiges of the foot of Füh (or Buddha) ; in their creed, the followers of this religion affirm that these vestiges of Buddha really exist. They relate that, by carefully reciting certain prayers, they may acquire the shape of dragons, and rise into the clouds.

In the years *woo tih*, of the Tang dynasty (A. D. 618 to 627), there were great troubles in the kingdom. The king, *She-lo-ye-to†*, made war and fought battles such as had never been seen before. The elephants were not unsaddled in their rapid marches ; the soldiers quitted not their shields, because this king had formed the project of uniting the four Indias under his rule. All the provinces which faced the north submitted to him.

At this same period of the Tang dynasty, a zealous follower of Füh-too (Buddha), surnamed *Heuen-chwang*, arrived in this kingdom (of India). *She-lo-ye-to* caused him to enter his presence, and said to him : “ Your country has produced holy (great) men. The king of *Tsin‡*, who has routed the armies of his enemies, ought to be well satisfied ; he may be compared to me ; tell me what sort of man he is ? ” *Heuen-chwang* replied by vaunting the exploits of *Tae-tsung*, who had put down revolt and reduced the four nations of barbarians to submission to him. The Indian prince, full of fire and energy, was highly satisfied with this recital, and observed : “ I will send (an embassy) to the court of the emperor of the East.”

In fact, in the 15th of the years *ching kwan* (A. D. 642), ambassadors from the king of the country called *Mo-kea-to* (Magadha) came to offer books to the emperor (*Tae-tsung*), who directed that an officer of cavalry of inferior rank, named *Leang-hwae-king*, should go at a prescribed time to assure the (king of India) of the peace and harmony which subsisted between them. *She-lo-ye-to*, surprised, inquired of the men of the kingdom (Indians), saying : “ From the time of antiquity to the present day, have ambassadors from *Mo-ho-chin-tan§* come into our kingdom ? ” They all replied : “ None have hitherto come ; what is termed the kingdom of the Middle, is *Mo-ho-chin-tan*.” Whereupon, the king, going to meet the ambassador, bent his knee in token of obedience and respect (*mō-pae*) to receive the letter (*chaou-shoo*) of the emperor of China, which he placed on the top of his head. Ambassadors (from the king of Magadha) came again, and directly, to the court. An imperial order directed an assistant

* This is a repetition of what has been before said ; but, as the object of *Ma-twan-liu* was to combine all the ancient documents and all the authorities known to him, which could tend to establish a fact, we only see in this a fresh proof of the exactness of the various Chinese accounts. Some of the Sanscrit astronomical treatises were translated into Chinese under the Tang dynasty.

† This proper name might be intended to represent the Sanscrit श्रीरहित *Sri-rahita*. It remains to be seen whether a king of this name reigned in India at this period. [May it not rather be assimilated to the *Siladitya* who reigned in Saurashtra in the 6th century ? See M. JACQUET'S remarks in the last volume.—Ed.]

‡ *Tsin* is the name of the dynasty which reigned over China from B. C. 249 to 202, during which the Chinese power caused it to be known for the first time in Central and Western Asia, its conquests being extended to the Caspian Sea and Bengal, in the reign of *Tsin-she-hwang-te*, the celebrated Burner of the Books. The name of this dynasty has formed that of *China*, in Sanscrit चीन *China*, which occurs in the *Laws of MENU*, book x. sl. 44, and therefore at a date anterior to the third century before our era, which may be easily explained in referring the name of *China* to the period of the foundation of the kingdom of *Tsin* in the western province of *Shen-se*, about B. C. 1000.

§ In Sanscrit, *Mahā-China*, ‘ great China ; ’ in the modern dialects of India, *Mahā-Chin’stan*, ‘ the country of great China,’

of the department of war, named Le, to take cognizance of the letter of submission (brought by the Indian ambassadors), and to make a report upon it. The ministers reconducted the ambassadors without the city, and it was ordered that in the capital perfume should be burnt as they went along.

She-lo-ye-to, surrounded by his ministers, received, with his face turned to the east, the imperial document (*chaou-shoo*); he again sent a present of pearls of fire (*ho-choo*), *yüeh-kin* plants, and the tree *poo-te**.

The 22nd year, of the same period (i. e. A. D. 648), the emperor of China sent a superior officer, named Wang-heuen-tse, as ambassador into this kingdom (of Magadha), in order that the principles of humanity and justice, which had been diffused in that country, should have a protector and representative there. But before his arrival, She-lo-ye-to was dead; the people of the kingdom had revolted, and the minister (of the deceased king), named Na-foo-te-o-lo-na-shun, had taken his place. He sent troops to oppose the entry of Heuen-tse (the Chinese ambassador); under these circumstances, the latter took with him some tens of cavalry, and attacked the troops (of the usurper), but could not vanquish them, and his little force was exterminated; and the result was, that the tribute received (by the Chinese ambassadors) in the different kingdoms (he had visited) was taken. Heuen-tse retired alone, with all expedition, to the western frontiers of Too-fan (Tibet); and he ordered (*keou-chaou*) the neighboring kingdoms to furnish him with troops†. Too-fan sent him 1,000 armed men; Nēē-po-lo‡ furnished 7,000 cavalry. Heuen-tse, after organizing his force, advanced to give battle as far as the city of Too-poo-ho-lo§, which he took by assault in three days. He caused 3,000 persons to be beheaded, and 10,000 were drowned in the river. O-lo-na-shun escaped into the kingdom of Wei. He there rallied his dispersed troops and returned to the charge. The (Chinese) general made him prisoner, with 1,000 men, whom he beheaded. The remainder of the people retired with the king's wives to the banks of the river Kan-to-wei||. The humanity of the Chinese general (*sze-jin*¶) attacked them, and created a great disorder amongst this population. He likewise captured the concubines and children of the king, as well as other prisoners, men and women, to the number of 12,000, besides animals of all kinds, amounting to 20,000.

* The words *poo-te* are probably the transcription of the name of a tree in Sanscrit, perhaps the *vata*, a sacred tree employed in religious ceremonies, and of which mention is often made in Sanscrit poetry. What confirms this conjecture is the following passage in Kang-he's dictionary, under the character *poo*: "*poo-te* is the name of a tree which grows in the kingdom of Mo-kea-to (Magadha)." The same dictionary adds, that in the books of Fuh, it is said, "*Poo-te-sa-to* (Bodhisattva) signifies the essence of what is manifest, declared; by abbreviation, we say '*Poo-sa*.'" The term *Bodhisattva*, in Sanscrit, signifies literally, 'truth of intelligence:' it is the name given to certain Buddhist patriarchs, who have raised themselves to the state of divine sanctification.

† This authoritative demand, if it be not introduced here, as the facts, indeed, show, to gratify Chinese vanity, would denote that, at this period, Tibet was already dependent upon the Chinese empire as well as several other neighbouring kingdoms.

‡ Nepála, or Nepal: see the account given by Ma-twan-lin (book 335, fol. 14), in the translation by M. RE'MUSAT, *Nouv. Mém. Asiat.* t. i. p. 193.

§ Too (the first character) may be read *cha*, or *tse*. If it be read *cha*, the pronunciation of the epoch in question, *Cha-poo-ho-lo* would be an exact transcription of *Champaran*, a city placed by Abul-Fazil in Bahar, the ancient kingdom of Magadha, and probably the same as *Chapra*, on the Ganges, higher up than Patna; for *Chapra* is but a variation of *Champaran*, as the latter is likewise of *Champaranagora*.

|| This is no doubt the Godáveri, which falls into the Gulf of Bengal, to the eastward of Masulipatam.

¶ The *humanity* is, at the least, a singular expression to be used in these circumstances; yet the text admits of no other sense.

He subjected 580 cities and towns, and his power grew so formidable, that the king of the kingdom of eastern India, named She-keou-mo*, sent him 30,000 oxen and horses to feed and mount his army, as well as bows, sabres, precious collars, and cords of silk. The kingdom of Kea-mō-loot† furnished different articles, with a chart of the country‡, amongst which was a portrait of Laou-tze.

Heuen-tse took with him O-lo-na-shun, to present him to the emperor (as a vanquished enemy). There had been an imperial order, which prescribed that the ancestors should be informed hereof, in the temple dedicated to them; and Heuen-tse was elevated, at the court, above the magistrates (*ta-foo*) of all ranks.

In his travels, the Chinese ambassador had encountered a doctor named Na-lo-urh-po-so-mei§, who told him that he was 200 years old, and possessed the recipe of immortality. The emperor|| (having learned this intelligence) immediately quitted the hall of audience, in order to despatch an envoy in search of the philosophical stone (*tan*). He directed the president of the ministry of war to furnish the envoy with all the necessary instructions and provisions to enable him to prosecute his journey. This envoy traversed "the world" on horseback, to collect supernatural drugs, as well as the most rare and extraordinary stones. He travelled over all the kingdoms of the Po-lo-mun (Brahmans), in the country called the Waters of Pan-cha-fa¶, which (waters) come from the midst of calcareous rocks (*shih-kew*, 'stone-mortar,' or 'rock'), where are elephants and men of stone to guard them. The waters are of seven different species; one is hot, another very cold (or frozen, *ling*). Plants and wood may be consumed in it; gold and steel may be fused in it; and a person who dips his hand into it will have it entirely burnt off. This water is poured into vases by means of skulls of camels, which turn round. There is also a tree there, called *tsoo-lue-lo*, the leaves of which are like varnish or blacking. It grows upon the top of scarped and desert mountains. Enormous serpents guard it; and those who wander in the neighborhood cannot approach it. A person who wishes to gather the leaves employs different arrows to strike the branches of the tree; the leaves then fall. A multitude of birds also take the leaves into their beaks; and carry them a great way: it is necessary, in like manner, to direct arrows against them, to obtain these leaves. There are other curiosities in this country of the same kind.

* *Srī-kumāra* ?

† This kingdom must be that of *Kāma-rūpa*, mentioned in the Sanscrit inscription on the column of Allahabad, and which formed the western part of the kingdom of Assam, on the frontiers of Tibet. The syllable *kā* is well represented by *kea*, as *ma* is by *mo*, and *rū* by *loo*; the last syllable *pa* is not transcribed. It is worthy of remark, that it is a general law of transcription from Sanscrit into Chinese, that the short *a* should be represented in the latter by *o*.

‡ This curious circumstance is a ground for thinking (for it is not a mere conjecture), that there existed, and perhaps still exist, in India, native geographical charts and works on geography; but all these articles must have undergone the fate of the royal archives, where they were carefully preserved and concealed from the eager eyes of European conquerors.

§ The first two words of this transcription represent faithfully the Sanscrit word नर *nara*, 'man,' which enters into the composition of many proper names; but the Sanscrit value of the other four syllables is more difficult to determine.

|| Tae-tsung, who reigned from A. D. 626 to 649.

¶ This is a very exact transcription of the Persian word پنجاب *Panjāb*, the 'five waters,' or 'five rivers' (in Sanscrit *Panchananda*), which is the designation given to a large and fertile province of India. The last syllable *fa*, in the Chinese transcription, represents the more faithfully the syllable *āb*, inasmuch as the consonants composing it are two labials very often taken one for the other.

The drug (of immortality) could not be found or verified by this envoy, who, being recalled, could not proceed further, and returned and died at Chang-gan (the capital).

In the time of Kaon-tsung (A. D. 650 to 684), a Loo-kea-ye-to*, of the country of Woo-chat, in eastern India, came likewise to offer homage at the court of the emperor, giving himself out as a possessor of the recipe of immortality, and as being able to transform himself into lieutenant general of armies.

In the third of the years *kên-fung*† (A. D. 667), the Five Indias (or five kingdoms of India) sent ambassadors to the court of the emperor. In the years *kae-yuen* (A. D. 713 to 742), an ambassador from Central India proceeded three times as far as the extremity of southern India, and came only once to offer birds of five colors that could talk§. He applied for aid against the Ta-she|| (or Arabs) and the Too-fan (or Tibetans), offering to take the command of the auxiliary troops. The Emperor Heuentsung (who reigned from A. D. 713 to 756) conferred upon him the rank of general-in-chief. The Indian ambassadors said to him: "the *Fan* (or Tibetan) barbarians are captivated only by clothes and equipments. Emperor! I must have a long, silk, embroidered robe, a leathern belt decorated with gold, and a bag in the shape of a fish." All these articles were ordered by the emperor.

Northern India also sent an embassy to the court of the emperor.

At the close of the years *kan-yuen* (about A. D. 756), the bank of the river (*Ho-lung*, the Ganges?) gave way and disappeared.

The third of the years *kuang-shun*, of the modern Chows (A. D. 953) a Sā-mun¶ (priest of Buddha), of western India, with several priests of his religion, representing sixteen different tribes or nations (of India), brought tribute, amongst which were some horses of the country.

The third of the years *kan-tih*, of the Sung dynasty (A. D. 966), a Buddhist priest of Tsang-chow, named Taou-yuen, who had returned from the western countries (Se-yu), had brought from thence a portion of

* That is, a लोकायनिक *Lōkáyatika*, or follower of the atheistical system of philosophy founded by Chārṣvāka, entitled *Lōkáyata* (see Mr. COLEBROOKE'S Essays on the Philosophy of the Hindus). The suffix *ka*, which forms collective names in Sanscrit, is represented in Chinese by the character *che*, which serves in like manner to form adjectives and collective names in Chinese.

† A kingdom situated near the mouths of the Ganges.

‡ There is an error here in the text; the years *kên-fung* were only two, 666 and 667.

§ These were of course parrots.

|| *Tu-she*, 'great eaters,' (rather *tāzl*, Arabian, J. P.) is the name by which the Chinese designate the Arabs. This curious passage throws great light on this obscure period of Indian history, and confirms a fact hitherto scarcely noticed, but which has been asserted by two Arabian authors, ALMAKIN and ABULFEDA, namely, the invasion of India by the Arabs at the beginning of the eighth century. "MAHOMED BEN CASSIM," says the former, in his history of the Sarraṣins, "took India; he obtained possession of the countries adjoining the Sind (Indus), gave battle to DAHAR, who was king of them, vanquished him, made him prisoner, and put him to death." The other, in his *Musulman Annals*, translated by REISKE, says: "MAHOMED BEN CASSIM overrun India as conqueror." But the following is a passage, curious in another respect, concerning the same fact; it is taken from the History of the Empire of the Khalifs, translated from Tabari (Turkish edition), for a knowledge of which we are indebted to M. REINAND: "This same year, 87 (A. D. 709) was gloriously terminated by the defeat of 200,000 barbarians, who had entered the country of the Musulmans, commanded by BEGHABOON, nephew of the emperor of China. The Musulmans confessed that they owed this important victory to the protection of God."

¶ This Indian title is more frequently written *Sha-mun* (with different characters); it is a close transcription of the Sanscrit *Samāna*, (rather, *Sramana*. J. P.)

the body of Füh*, vases of crystal, and Sanscrit writings on leaves of *Pei-to*, to the number of forty, which he presented to the emperor. Taou-yuen returned to the western countries (of Asia) in the years *tēen-fuh* (A. D. 943 to 944); he was twelve years on his travels, wandering in the Five Zin-too for six years. The Five Zin-too (divisions of India) are the same as Tēen-choo† (India). He brought back an abundance of books, to understand the use of which he exerted all his efforts. The emperor Tae-tsoo (who reigned from A. D. 950 to 953) summoned him into his presence, for the purpose of interrogating him respecting the manners and customs of the nations amongst whom he had travelled; the height of the mountains, and extent of the rivers. He answered all the questions one by one. For four years, a priest of Buddha, he dedicated all his cares to one hundred and fifty-seven persons. On his return to the palace, he said he had been desirous of returning into the western countries in search of the books of Füh (or Buddha); that he had found some of them where he had travelled, in the provinces of Kan-sha, Se-soo, and others; that these provinces (*chow*) produced tortoises, herbs, and woods, in great abundance, the export of which yielded the revenue of the kingdom. Moreover, he passed beyond the kingdom of Poo-loo-sha and of Kea-she-me‡. Orders were everywhere given that guides should be provided him on his route.

After the years *kae-paou* (about A. D. 969), a Buddhist priest of India brought some Sanscrit books (or Indian presents§), and envoys continued to bring them from thence. During the winter of the eighth year, the son of the king of Eastern India, named Jang-kē-kwang-lo (?) came to court to bring tribute. The king of the kingdom of the Law in India|| happening to die, his eldest son succeeded him; all the other sons of the deceased king quitted their royal abode, and became priests of Buddha, and returned no more to reside in their native kingdom. One of the sons of this Indian king, named Man-choo-she-le¶, came into the kingdom of the Middle (China) as a Buddhist priest. The Emperor Tae-tsoo ordered that he should be provided with an apartment in the palace of his ministers of state, that he should be well treated whilst he remained in the capital, and that he should have as much money as he required. The body of Buddhist priests conceived a jealousy against him; and being unable to repel the false accusations, of which he was the object, he requested permission to return to his native kingdom, which was granted by the emperor, who published a proclamation on the subject. Man-choo-she-le, at first, was much alarmed at their intrigues; but when all the Buddhist priests knew the meaning of the

* *Tih-Fuh-shay-le-yih*: the characters *shay-le* are the transcription of the Sanscrit word शरीर *Shārira*, 'body,' or शरीरिन् *Shārīrin*, 'corporeal,' Dr. MORRISON, in his Dictionary (Vol. I. Part i. p. 530), states on an authority unknown to us, but apparently to be relied on: "*Shay-le-ta*, a Pagoda, raised over certain relics or pearly ashes of Buddha; these, it is said, are contained in a gold box; if, on being opened, they exhibit a dingy appearance, it is deemed a bad omen; if a red appearance, a good omen."

† Another transcription of the Sanscrit सिन्धु *Sindhú*, the river Indus, whence the European and Arabic name of India.

‡ These are the kingdoms of Purusha and Cashmere. See Ma-twau-lin, book 335, fol. 15, and M. REMUSAT'S translation, *Nouv. Mélanges Asiat.* t. 1. p. 196.

§ *Che-fan-lae*, 'Presents from Che-fan.' It is not said in the text what was the nature of the articles brought; but it is fair to presume, that they were Buddhist books in Sanscrit, which were subsequently translated into Chinese.

|| *Tēen-choo-che-fa-kwā*, 'the kingdom of the Law of India;' apparently the kingdom of the Law of Buddha, i. e. Magadha.

¶ In Sanscrit मञ्जुश्री *Manjusrī*, a term which denotes a Buddhist saint.

imperial proclamation, they were disconcerted in their projects. The Buddhist priest prolonged his stay for a few months, and then departed. He said that it was his intention to embark on the southern sea (perhaps at Canton), in a merchant vessel, to return to his own country. It is not known where he eventually went.

On the 7th of the years *tse-fing-hing-kwō* ('the kingdom in great peace and prosperity'), equivalent to A. D. 983, a Buddhist priest of E-chow, named Kwang-yuen, returned from India; he brought from thence a letter from the king, Moo-se-naug*, to the emperor (of China). The emperor ordered that an Indian Buddhist priest should translate the letter, and acquaint him with the contents of it. The letter was to this effect; "I have lately learned, that in the kingdom of *Che-na*†, there existed a king, most illustrious, most holy, most enlightened; whose majesty and person subsist in themselves and by themselves. I blush every moment at my unfortunate position, which hinders me from visiting your court, in order to pay my respects to you in person. Remote as I am, I can only cherish, with hope, a regard for *Che-na*†; whether you are standing or sitting, in motion or at rest, (i. e. in all circumstances of life,) I invoke ten thousand felicities on your holy person‡."

Kwang-yuen also brought certain rare drugs, diamonds, talismans, amulets, to obtain good fortune, and secure the bearer against danger, as well as holy images of She-kea§, vestments without sleeves, called *kea-sha*, sometimes worn by the priests of Buddha in the exercise of their functions, and various articles used by the hand in eating, which he desired to be humbly offered to the august emperor of China, "wishing him all kinds of happiness; a long life; that he might always be guided in the 'right way;' and that all his wishes might be fulfilled: in the middle of the ocean of life and of death, most of those who cross it are engulfed||." Kwang-yuen then presented to the emperor, in person, a portion (or reliques) of the body of She-kea. He likewise translated and explained the entire contents of the letter, brought by a Buddhist priest, from the same kingdom (India); the expressions and sentiments are the same as in that of Moo-se-nang. The bearer of this document learned that it was from the kingdom of Woo-tên-nang (or Woo-chin-nang); that this kingdom belonged to Yin-too, of the north; that in twelve days, from the west, you arrive at the kingdom of Khan-to-lo (Candahar); twenty days further to the west, you reach the kingdom of Nang-go-lo-ho-lo; ten days further to the west, you come to the kingdom of Lan-po; twelve days more to the west, is the kingdom of Go-je-nang; and further to the west, that of Po-sze (Persia); after reaching the western sea (the Persian gulph), from northern Yin-too, in 120 days' journey, you arrive at the Central Yin-too; from thence to the westward, at the dis-

* In Sanscrit, *Mahā-Sinha*, 'Great Lion,' an epithet often given to Indian kings or, perhaps, rather the transcription of *Madhu-Sinha*, the name of a king of Bengal, mentioned in the *Ayeen Akheri*. We shall make here but one observation respecting the law of transcription of foreign names in Chinese, for the benefit of those who have not studied the language; namely, that the Chinese nasal termination *ang* has the same value as the *anuswara* in Sanscrit, or the labial *ṃ* at the end of words. It is, therefore, equivalent to the Sanscrit accusative: a termination which has become general in the dialect of the south of India.

† The first of the two characters which express this name (and which is an accurate representation of the Sanscrit चीन *China*) is differently written in two places; both are pronounced *Che*.

‡ This letter has been cited by Dr. MORRISON, in his *View of China*, but from a different author; from Ma-wan-lin.

§ Shākya-muni, patronymic name of Buddha.

|| This, we believe, to be the exact sense of this Buddhist phraseology.

tance of three *ching**, is the kingdom of Ho-lo-wei; still further to the west, in twelve days' journey, you reach the kingdom of Kea-lo-na-keu-je (Karana?) and in twelve days' journey more to the west, you come to the kingdom of Mo-lo-wei (Malwa; in Sanscrit *Mālava*); further to the west, twenty days' journey, is the kingdom of Woo-jan-ne (Oujein or, Sanscrit Ujjayani). In another twenty-five days' journey still to the west, you visit the kingdom of Lo-lo; and forty days' journey further to the west, the kingdom of Soo-lo-to (Surat); in eleven days' journey further to the west, you get to the Western sea. This makes in the whole a six moons' journey from Central Yin-too. When at Southern Yin-too, in ninety days' journey to the west, you arrive at the kingdom of Kung kea-na; and in one day further to the west, you come to the sea. From Southern Yin-too, in six months' journey to the south, you reach the South Sea (the sea of China). This was what was related by the Indian envoy.

The eighth year (983), a priest of Buddha, master of the law†, came from India, bringing books. In traversing part of the island of Sumatra‡, he met with the Buddhist priests Me-nio-lo, Che-le-yoo-poo-to; he charged them (as superior priests?) with a letter, which he wished to transmit to the kingdom of the Middle, with a great number of translated books. The emperor caused them to come to court to gratify his curiosity. The master of the law of Buddha (*fā*) again met with some mendicant Buddhists, wearing vestments without sleeves, and valuable head-dresses in the form of serpents§. He returned with them on their journey to India. A letter of recommendation (*peaou*) was given him, to enable him to traverse the kingdom of Tibet, with letters of credence, delivered by the emperor, to present to the king of the kingdom of San-füh-tsi or Sumatra. From this remote country he proceeded to the sovereign (*choo*) of the kingdom of Go-koo-lo, and that of the kingdom of Sze-ma-kié-máng-ko-lan (the Mongul empire?). He recommended Tan-lo to the king of the Western Heaven||, and his son formed the design of sending him, by his means, works on the spirits and geni.

In the years *yung-he* (984 to 988), a Buddhist priest of Wei-chow, named Tsou-hwan, returning from the western countries of Asia (*Se-yu*), with another Buddhist priest from a distant country, named Mih-tan-lo, where he had been presented to the king of Northern Yin-too, seated on a throne of diamonds, and named Na-lan-to, brought some books. There was besides a Brahman priest, named Yung-she ('eternal age'), and a Persian infidel (*gae-taou*), named O-le-yan, who came together to the capital. Yung-she said that his native country was called Le. It was ascertained that the family name of the king of this kingdom was Ya-lo-woo-te; that his first name was O-jih-ne-fo; that he wore a yellow dress, and had on his head a cap of gold, adorned with seven precious gems. When he goes out, he mounts an elephant; he is preceded by couriers, with musical instruments on their shoulders; the crowd rush into the temple of Füh, where he distributes gifts to the poor, and suc-

* The European Chinese dictionaries do not give the value of this itinerary measure. In the Dictionary of Kang-he, it is stated to be a measure of distance, but no equivalent is stated.

† *Sang-fa*; in Sanscrit, *Sangha* and *Dharma* (the priest, or religious meeting), and the law.

‡ *San-fah-tsi*.

§ "Valuable head-dresses (or caps), in the form of serpents," are, doubtless, the shawls which the modern Muhammadans, as well as the Hindus, wrap round their heads.

|| *Tsan-tan-lo-se-téen-wang*.

cour to those who need it. His concubine was named Mo-ho-ne; she wore a red dress, adorned with gold filagree work. She goes out but once a year, and distributes gifts freely. People flock to attend the king and his concubine, and raise shouts of joy as they pass. There are four ministers to administer all the affairs of the kingdom, who are irremovable. The five kinds of grain and the six kinds of edible fruit, are the same as the Chinese. They use copper money for purposes of commerce. They have a literature and books, which are long and are rolled up as in China, except that the leaves are not pierced and attached one to another.

From their kingdom, six months' journey to the East, you arrive at the kingdom of the Ta-she (Arab); in two moons more, you get to Se-chow (the Western Isle); in three moons more, you arrive at Hea-chow (the Isle of Summer). O-le-yan says, that the king of his native country was entitled *hîh-yîh* (Black-dress); that his family name was Chang, and his first name Le-moo; that he wore silk dresses, embroidered and painted in different colors; that he wore each only two or three days, resuming them once. The kingdom has nine ministers, irremovable, who direct state affairs. Commerce is carried on by barter, no money being used.

From this kingdom, six months' journey to the East, you arrive at the country of the Brahmans*.

The second of the years *che-taou* (996), some Buddhist priests from India, who arrived in ships as far as the mouth of the river (*che-gan*), bringing to the emperor a brass bell and a copper bell, a statue of Fûh†, and some *Fan* (Indian) books, written upon leaves of the *pei-to* tree, the language of which is not understood.

The third and ninth of the year *tên shing* (1025 to 1031), some Buddhist priests of Western Yin-tôo, lovers of wisdom, knowledge, sincerity, and other virtues of this kind‡, brought *Fan* books § as presents, revered as canonical. The emperor gave to each a piece of yellow stuff, to wrap round the body, in the form of a band.

The second moon of the fifth year some *Sang-fä*, to the number of five, denominated 'fortunate' and 'happy,' and by other epithets of the same nature, brought presents of *Fan* books. The emperor gave them pieces of yellow stuff to make trailing robes for them.

The third of the years *king-yew* (1036), nine Buddhist priests, called 'the virtuous,' 'the exalted,' &c., brought as tribute, *Fan* books and bones of Fûh, with teeth, copper, and statues of Poo-sa (Boddhisatwas): the emperor gave them caps and bands.

[To be continued.]

* Here ends the first narrative of the *Yuen-keen-luy-han*.

† This traffic in images of Buddha continues to the present day, as may be proved by the well-known circumstance of the large stone statue seized on its way down the river from *Patna*, at the breaking out of the Burmese war, and restored from the museum, wherein it was deposited, only three years ago. It would be curious to ascertain whether any Buddhist images in China bear the Nâgari inscription *ye dharma hétu*, &c., like those dug up at *Tagoung* in *Ava*.—ED.

‡ These are translations of Sanscrit Buddhist epithets.

§ *Fan-shoo-king*, 'classical Indian books.'

*X.—Proceedings of the Asiatic Society.**Wednesday Evening, the 1st February, 1837.*

The Rev. Dr. MILL, Vice-President, in the chair.

Mr. J. CURNIN, Captain F. JENKINS, Mr. GEORGE HILL, and Mr. RICHARD WALKER, Captain EDWARD SANDERS, Bábus RA'MNA'TH TAGORE and PRASANNAKUMAR TAGORE, proposed at the last meeting, were ballotted for, and duly elected Members of the Asiatic Society.

Mr. J. MILL, and Mr. W. CRACROFT, were proposed by Mr. J. PRINSEP, seconded by Dr. MILL.

Mr. P. A. LAIR, proposed at the last meeting, was, upon the favorable report of the Committee of Papers, elected an Honorary Member of the Society.

The following letter from Sir ALEXANDER JOHNSTON, Chairman of the Committee of Correspondence, Royal Asiatic Society, was read.

Royal Asiatic Society, Grafton Street, Bond Street, June, 1836.

MY LORDS AND GENTLEMEN,

The vast extent, fertility, and populousness of our Indian possessions, are known, in a general way, to all the world. A glance, indeed, at the map will shew that their extremes of latitude may, without exaggeration, be indicated by the distance from Gibraltar to the farthest point of Scotland; and that the measure of their extent, from west to east, will be nearly found in a line drawn from the Bay of Biscay to the Black Sea. Lying between the 5th and 31st degree of north latitude, with almost every conceivable variety of position and exposure, they present a range of soil and climate greatly exceeding that which is to be found within the bounds of Europe. They embrace, in truth, the utmost limits of vegetable life, from the burning heat of the desert to the point of perpetual congelation: presenting, in one quarter, the loftiest mountains in the world; and, in another, vast alluvial plains, intersected by the natural channels of many noble rivers, with a corresponding variety of productions belonging both to tropical and northern regions. Not less than eighty millions of people are subject to the dominion of England: already they produce (though with imperfect skill) most of the articles which form the great staples of the import trade of this country, as materials of its manufacture, or as the objects of comfort and luxury to the great body of its inhabitants, of which cotton, silk, indigo, sugar, coffee, and tobacco, may be mentioned as pre-eminent; and they offer an assured prospect of an almost boundless market for the produce of English manufacturing skill, if the capabilities of their country be drawn forth, and their industry be duly instructed, directed, and fostered.

But though these general truths be readily acknowledged, their practical application is very imperfectly understood. Few men in England really know what India does or can produce, with sufficient precision, at least, to justify commercial speculation. Few in India know what England requires; and none of the lights of modern science having been applied to the agriculture of the former country, its productive powers have, as yet, been very imperfectly developed.

Believing that the interests of both countries may be very importantly promoted by an interchange of knowledge, and especially by communicating to India the information and stimulus which are alone wanting to the full development of its vast resources, it has been resolved by the Royal Asiatic Society, to constitute a distinct Section, for the following, and other similar purposes; provided the necessary funds can be raised for giving adequate effect to the design.

1st. The examination of the natural and agricultural products of India, available for the purposes of commerce and art.

2ndly. Inquiry into the causes of the general inferiority of the staple articles of Indian commerce.

3rdly. The introduction of new articles and processes from analogous climates in other parts of the world.

The Committee of Correspondence of the Royal Asiatic Society beg leave to bring the circumstance to your notice; trusting, confidently, on your zealous support of a measure, calculated to promote objects alike interesting to the patriot and the philanthropist.

Of the means of support, the most acceptable would, of course, be such an accession of new members, European or Asiatic, as would at once provide the necessary funds, and as would afford the requisite contribution of knowledge and experience in the various branches of inquiry to which the labors of the Section are to be directed. But the Society will be most happy to receive the tender of the aid (whether in knowledge or funds) of affiliated Societies, pursuing the same beneficial objects, or any other co-operation or assistance which you may have the goodness to offer.

For the fuller explanation of the scheme in question, the Committee direct me to transmit to you the accompanying printed papers; and I shall be happy to afford you any further information in my power, in regard to it, that you may require.

I have the honor to be,
My Lords and Gentlemen,
Your most obedient humble servant,

ALEXANDER JOHNSTON,

Chairman of the Committee of Correspondence, R. A. S.

To the President, Vice-Presidents and Members of the Asiatic Society of Bengal.

Resolved, that a portion of the papers be made over to the Agricultural Society, and that general circulation be given to the Royal Asiatic Society's prospectus.

A letter from Mr. ALEXANDER VATTEMORE, addressed to the Governor General of India, was read, proposing to negotiate a general system of exchanges of duplicates between the various libraries and museums of the world.

Resolved, that copies of the library catalogue now printing be furnished to Mr. VATTEMORE, in furtherance of his laudable design.

The following protest from members of the Society residing in the interior was communicated by Colonel J. COLVIN.

Dissentient.

It appears to us that in a society constituted as the Asiatic Society of Bengal is, the existence of a fund vested in Government Securities is absolutely necessary for the permanence of the foundation.

We consider that such funds are intended to be reserved for cases of extreme emergency, and that the interest only of *such funds* should be carried to the current expenses of the Society.

We also consider that any infringement of a law upon which the Society's existence may be said to depend, is injurious not only to the Society itself as a body, but to the interests of the members individually; and may be drawn in as a precedent for further encroachments, leading to the ultimate dissolution of the Society.

For these reasons, we dissent from the resolution passed at the meeting of the Society of the 4th May, 1836, continuing the services of a Curator at two hundred rupees per mensem; the account current shewing a deficiency of rupees 571-0-1, and the payment of the Curator's salary being proposed to be made out of the vested funds of Mr. BRUCE. Further, in adverting to the Secretary's remark, "that M. BOUCHEZ, the assistant and working Curator, would be competent to set up all new specimens and preserve the present col-

lection," we see no necessity, under the present difficulties of the Society, of retaining the higher appointment.

Northern Doab, }
14th Dec. 1836 ; }

and, Calcutta, }
26th Jan. 1837. }

P. F. CAUTLEY, *Capt. Arty.*

H. FALCONER, *M. D.*

W. M. DURAND, *Lieut. Engrs.*

W. E. BAKER, *Lieut. Engrs.*

ALEXANDER COLVIN.

JOHN COLVIN, *Lieut.-Col. Engrs.*

After discussion it was agreed that the protest could not affect the resolution passed by the Society in May, 1836, but that it would very properly become matter of consideration at the expiration of the annual term for which the museum grant was then confirmed.

The Secretary read correspondence with Mr. LANE respecting the publication of his *Anglo-Burmese Dictionary* under the Society's auspices. He had written to Colonel BURNEY for the manuscript, which would immediately be put in hand.

A statistical paper having been communicated by Mr. H. WALTERS, that gentleman was requested to join the Committee lately appointed for that object, to which he assented.

Library.

The following books were presented.

Bulletin de la Société de Géographie, tome 5—*by the Geographical Society of Paris.*

Journal Asiatique for April, May, and June, 1836—*by the Asiatic Society of Paris.*

Shams-ul hindisah, a mathematical work, compiled by the Nawáb SHUMSOOL OOMRA at Hyderabad—*presented by the author through Mr. C. Trench.*

An Australian Grammar, comprehending the principles and natural rules of the language as spoken by the Aborigines, by L. E. THRELKELD—*by the author through Mr. Cracroft.*

A collection of examples on the Integral Calculus, by Mr. H. SHORT, Queen's College, Cambridge—*presented by Mr. H. Horneman.*

A dissertation on the soil and agriculture of Penang, by Major JAMES LOW—*by the author.*

The first No. of the Medical and Physical Society's Journal—*by the Society.*

The following books were received from the booksellers :

Lardner's Cabinet Cyclopaedia, England, Vol. 6th.

—————, Greece, Vol. 3rd.

Analecta Arabica, Part I.

Institutiones Juris Mohammedani circa Bellum contra eos qui ab Islamo-sunt alieni, by ERN. FRID. CAR. ROSENMULLER, Leipsig, 1825.

Y King, Antiquissimus Sinarum Liber ex Latina Interpretatione P. Regis aliorumque, &c. ; by Professor JULIUS MÜHL.

Baghavat Gita, translated into German, by C. R. G. PEIPER, Leipsig, 1834.

Taberistanensis, id est Abu Dschaferi Mohammed Ben Dscherir Ettaberi Anales Regum Atque Legatorum Dei ; by J. G. L. ROSENGARTEN, Vol. 1st, Berlin, 1831.

Physical.

The fossil bones from the *Perim* island, presented by Lieut. GEORGE FULLJAMES, Bombay Engineers, were laid on the table for inspection.

This very valuable acquisition comprises many jaws of the mastodon in fine preservation—also jaws or teeth of the hippopotamus, elephant, rhinoceros, a larger animal assimilating thereto (lophiodon ?), mastodon, sow, anthracotherium (?) deer, ox, &c., the femur of an elephant as large as that from the Nerbudda,

and much exceeding in size, as was remarked by Colonel COLVIN, any that had been found in the *Sewalik* range, many vertebræ and unidentified bones and horns, tortoise fragments, and a peculiarly perfect saurian head. The special thanks of the Society were voted to Lieutenant FULLJAMES for his magnificent donation.

[We shall take an early opportunity of lithographing some of the most curious of these specimens.—ED.]

Lieutenant FULLJAMES mentions that he is now employed in sinking a bore at *Gogo*, about five miles from *Perim*. It has been already carried to 250 feet:—the last 150 through an immense bed of blue clay, containing pyrites and shells, resembling the muscle:—the deepest bed of sandstone was thirty feet, but it differed essentially from the bone stratum of *Perim*.

A skeleton of the common hog (*sus scrofu*,) was presented by Dr. A. R. JACKSON, mounted in the museum.

Mr. WILLIAM CRACROFT presented to the Society a large variety of objects of Natural History, collected by himself during his residence in New South Wales and Van Dieman's Land; accompanied with an illustrative notice.

This collection contained three volumes of a hortus siccus of the chief indigenous plants of these colonies—a rich series of ornithology and conchology—and specimens of the fossil shells, fossil wood, and minerals of which the islands present so many fertile deposits; ores of lead, copper, and iron, have been discovered, but are not yet worked, and coal is plentiful.

[The author's notes will be inserted hereafter.—ED.]

Dr. G. EVANS exhibited to the meeting a very large skull of an animal generally considered to be the Bison of Indian forests, which he recognized as the Gaur (*Bos gaurus*), and distinguished from the skull so named in the museum.

[The note, outline, and arguments pro and con shall have early insertion.]

It was moved by Sir BENJAMIN MALKIN, seconded by Colonel COLVIN, and carried unanimously,

That, with reference to the rapid increase of the museum, particularly in the department of fossil geology, and to the limited funds at the Society's disposal, the subscription of individual members shall be invited for the preparation of cabinets and other improvements connected with this highly important branch of the Society's researches, and that the Secretary do circulate a notice to this effect to members of the Society.

[The sum subscribed by members present is inserted on the cover notice, to which the attention of members is invited.—ED.]

The following notice, dated *Sihor*, 17th January, was recorded in hopes of eliciting further observations of the same phenomenon.

At *Bersia*, Lat. 23° 38'. Long. 77° 30', on January 11th, at 6h 00m, a meteor appeared near β Andromedæ, and not far from the Zenith; it went down to the westward, occupying 2 or 3 seconds in its flight, and inclining a little to the left; at about 30° of altitude it burst into a globe of light little inferior to the sun in size and brightness; and then disappeared, leaving behind a long train of smoke which continued visible for many minutes, like a thin cloud enlightened by the sun's rays; at about 6h 5m a faint rumbling sound was heard like the distant discharge of artillery. The appearance was nearly the same at *Sihor*, though distant 36 miles S. S. W.

Should this meteor have been noticed at *Mhow* or *Ajmir*, the place over which it burst may be determined, and probably a meteoric stone discovered.—W. S. J.

Meteorological Register, kept at the Assam Office, Calcutta, for the Month of January, 1837.

Day of the Month.	Observations at 10 A. M.					Observations at 4 P. M.					Temperature of water at 10 A. M.		Rain.	Wind.		Weather.	
	Old Stand. Barometer at 32°.	New Stand. Barometer at 32°.	Thermometer in air.	Depression of wet-bulb.	Do. by less.	Hygrometer.	Old Stand. Barometer at 32°.	New Stand. Barometer at 32°.	Thermometer in air.	Depression of wet-bulb.	Do. by less.	Hygrometer.		10 A. M.	4 P. M.	Morning.	Evening.
1	30.078	30.043	67.1	9.0	8.7	54	29.974	29.925	73.7	15.5	13.6	67.0		N.	nw.	cumuli. fine.	cumuli. fine.
2	30.0	30.047	67.7	10.7	11.1	48	30.0	30.003	73.4	16.2	16.0	63		n.	nw.	do	do
3																	
4																	
5	007	29.989	65.0	12.0	12.0	73	30.0	30.000	74.7	15.5	13.6	63		nw.	nw.	clear.	do
6	031	30.010	64.2	9.6	9.3	73	30.0	30.000	73.4	16.2	16.0	63		nw.	nw.	do	do
7	030	30.047	64.7	9.6	10.6	76	30.0	30.000	74.7	15.5	13.6	63		n.	n.	do	do
8	113	30.034	63.9	7.3	7.8	81	30.0	30.000	72.1	13.1	13.0	63		n.	n.	do	do
9	071	30.050	66.6	5.7	6.3	82	30.0	30.000	72.1	13.1	13.0	63		n.	n.	do	do
10	071	30.050	66.6	5.7	6.3	82	30.0	30.000	72.1	13.1	13.0	63		o.	n.	hazy.	do
11	127	30.036	66.6	7.7	8.3	80	30.0	30.000	73.1	11.7	11.7	72		o.	n.	hazy.	do
12	12	120	63.4	8.9	9.8	78	30.0	30.000	72.7	12.5	11.3	72		N.	N.	clear.	clear.
13	144	124	65.5	6.8	7.7	83	30.0	30.000	73.1	12.4	13.7	70		N.	N.	do	do
14	165	149	67.3	6.0	9.0	76	30.0	30.000	72.1	12.7	11.8	70		o.	se.	do	do
15	117	156	66.6	6.3	6.7	82	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
16	200	169	67.2	8.0	8.7	80	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
17	115	120	65.1	6.8	8.0	79	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
18	171	143	66.5	7.1	8.3	81	30.0	30.000	72.1	12.7	11.8	70		o.	se.	do	do
19	155	125	64.9	6.5	8.1	82	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
20	405	000	63.7	10.1	10.6	77	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
21	063	014	70.7	3.0	11.1	76	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
22	063	014	70.7	3.0	11.1	76	30.0	30.000	72.1	12.7	11.8	70		n.	ne.	do	do
23	283	006	29.999	65.4	9.9	76	30.0	30.000	72.1	12.7	11.8	70		SW.	W.	fresh breeze.	do
24	069	067	67.9	3.7	4.5	89	30.0	30.000	72.1	12.7	11.8	70		NW.	NW.	clear.	do
25	069	067	67.9	3.7	4.5	89	30.0	30.000	72.1	12.7	11.8	70		W.	W.	do	do
26	067	069	71.9	3.7	4.5	89	30.0	30.000	72.1	12.7	11.8	70		SE.	SE.	do	do
27	30.055	30.017	69.7	11.2	12.6	73	30.0	30.000	72.1	12.7	11.8	70		W.	W.	do	do
28	049	049	69.7	6.3	6.8	73	30.0	30.000	72.1	12.7	11.8	70		SW.	SW.	do	do
29	069	069	67.3	6.3	7.5	73	30.0	30.000	72.1	12.7	11.8	70		SW.	SW.	do	do
30	100	080	65.4	3.2	3.7	90	30.0	30.000	72.1	12.7	11.8	70		WSW	WSW	do	do
31	056	026	69.6	4.3	5.7	82	30.0	30.000	72.1	12.7	11.8	70		n.	n.	hazy.	do
Mean,	30.073	30.049	69.3	6.0	8.8	79	29.970	29.912	75.3	14.4	14.4	67		N.	S.W.	foggy.	do

The register thermometer having been broken by a bird, the temperature of the water of the river, and of a well affected by the tides has been substituted. The dew-point was not observed this month, and the hair hygrometer is still uncertain.



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